

# NEXTWORLD

\$4.95

APRIL  
1994

Call to Arms  
Barlow Says:  
Sink Clipper!



NeXT in Japan  
Zen and the Art  
Of Marketing



Extra Persistent  
Enterprise  
Objects Due



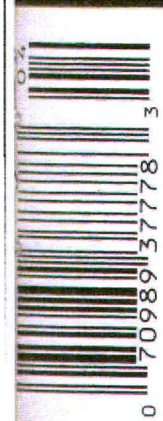
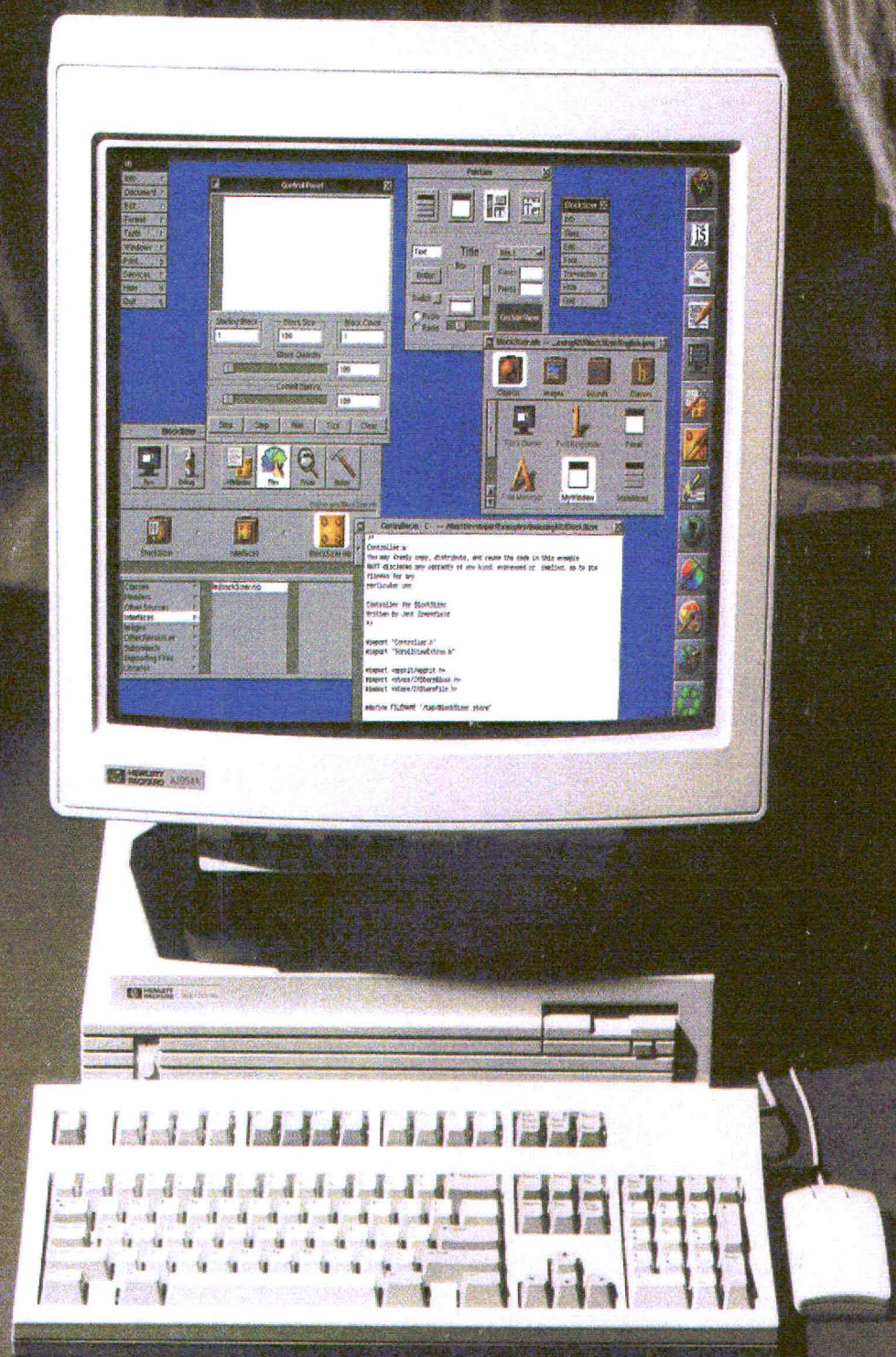
Oak and Acorns  
Ex-NeXTers Plant  
Third Party Seeds



## First Look

• NS for PA-RISC

• HP Model 712





# Lighthouse Design Offers an Immediate Return on Your NEXTSTEP Investment.

## DIAGRAM! 2

### Business and Technical Graphics

The first "smart" drawing program designed specifically for information graphics—and the business and technical professionals who create them.



- Object-oriented/CASE graphics
- Documentation and training graphics
- General purpose business graphics
- "Pro" version includes Clip Art library

## CONCURRENCE 2

*Coming in Q2 '94*

### Presentation and Outlining

A complete package providing all the power you need to create polished presentations—from 35mm slides and overheads to viewgraphs and on-line briefings.



- Integrated outline for brainstorming ideas
- Reads/writes PowerPoint and Persuasion files
- Drag/drop text editing, with spell checker
- Accepts over 30 standard image formats

## TASKMASTER

### Project and Resource Management

A completely integrated solution for serious project management—from software development to factory production.



- Interactive task outline and Gantt chart
- Drag/drop resource assignment
- MacProject & Microsoft Project compatible
- PERT graphics auto-generated by Diagram! 2

## WETPAINT

### Image Painting and Manipulation

A powerful addition to your suite of design tools—for stunning effects in presentations, custom user interfaces and graphic design.



- Supports TIFF, PS, EPS and RIB formats
- Extensive collection of tools and filters
- Explicit support for third party extensions
- Adobe Photoshop capabilities for NEXTSTEP!

For a **free CD-ROM** of demo software, write [info@lighthouse.com](mailto:info@lighthouse.com) or call 1-800-366-2279.

*Making Your Desktops as Productive as Your Developers...*

©Copyright 1994, Lighthouse Design, Ltd. All Rights Reserved. Diagram!, the Diagram! logo, Concurrence, the Concurrence logo, TaskMaster, the TaskMaster logo, WetPaint, the WetPaint logo, Lighthouse Design, and the Lighthouse Design logo are all trademarks of Lighthouse Design, Ltd. NEXTSTEP is a registered trademark of our friends at NeXT Computer, Inc. PowerPoint and Microsoft Project are registered trademarks of the Microsoft Corporation. Photoshop is a registered trademark of Adobe Systems, Inc. Persuasion is a registered trademark of Alaris Corporation. All other trademarks are the property of their respective owners. Specifications are subject to change without notice. Keep this and all other palliatives out of the reach of children, the naive, the uninitiated, and all others whose operation of heavy machinery may be impeded by unexpected excitement.

Circle 29 on reader service card

2929 Campus Drive Suite 250  
San Mateo, CA 94403  
415/570-7736 or 800/366-2279  
415/570-7787 (fax)



SIMSON00002131



# Contents

## Features

### FIRST NeXT RISC WORKSTATION 16

*Our first look at NEXTSTEP for HP PA-RISC running on the new HP Model 712 workstation suggests that NeXT has fulfilled its original vision*

BY LEE SHERMAN

### OPEN DOOR POLICY 19

*NeXT mixes tradition and innovation to gain market share in the Land of the Rising Sun*

BY SIMSON L. GARFINKEL

## Reviews

### DECAF DEVELOPMENT 24

*Professional Software's ESPRESSO! environment may not be everybody's cup of java*

BY SIMSON L. GARFINKEL

### REPORT FOR DUTY 26

*Ocean Software's Complete Access puts powerful database-reporting tools in the hands of corporate users*

BY SETH ROSS

### DAYDREAM BELIEVER 27

*Quix fulfills the impossible dream: Mac System 7.1 on your NeXTstation*

BY DON WILSON

### BOX SCORES 28

*Screamers: Pentium from Advance 2000 and '486 from Pars International*

BY DAN LAVIN AND LEE SHERMAN

### REVIEWS DESK 29

## News

### NEXTWORLD EXTRA 11

*NeXT gears for Expo with Enterprise Objects Framework*

## Community

### REAL WORLD: EVALUATING INTEL HARDWARE 5

*Matching numbers and needs: How companies choose from among 200 Intel brands and configurations*

BY PAUL KARON

### COMMENTARY: CHAOS OR CONTROL? 6

*A former NeXT district sales manager makes the case for an open NEXTSTEP OEM channel*

BY TIM FINNIGAN

### TALENT SPIN-OFF 8

*Former NeXT employees are seeding the third-party market with NEXTSTEP expertise*

BY PAUL CURTHOYS

**Plus** *New in Shrinkwrap and On the Net*

## Viewpoints

### THE NEXT WORLD 3

*Dan Ruby mandates managed competition in NEXTSTEP services*

### LIP SERVICE 4

*Readers' forum*

### DEVELOPER CAMP 22

*Simson Garfinkel wants to feel more secure with NEXTSTEP*

### NEXT INK 23

*Dan Lavin hits for the sales cycle with a '94 preview*

### VANISHING POINT 36

*John Perry Barlow sends out an SOS*

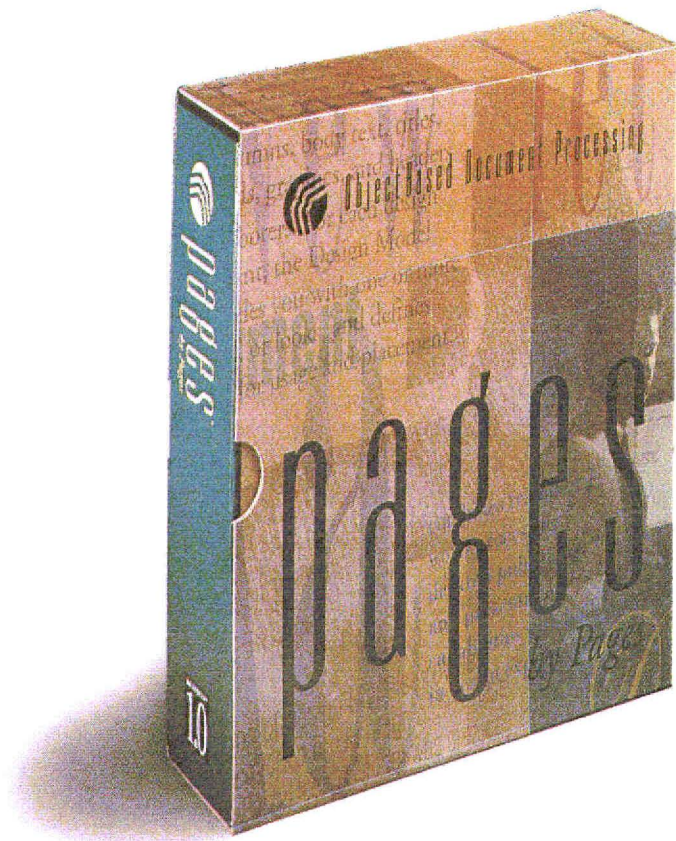
### NEXT GAMES 36

*Scott Kim takes us all to task*

*Photography by Fred Stimson*



# Wrestle WordPerfect<sup>TM</sup> Futz with FrameMaker<sup>TM</sup> Or simply use Pages<sup>TM</sup>



"Pages represents a breakthrough  
in document processing that should appeal  
to users at all levels"

NeXTWORLD June 1993

"Instant Pages - just add content... watch fully formed pages take  
shape before your very eyes"

Publish Magazine

"What you see is what you really wanted...  
Pages is one of the best arguments for NeXT"

Esther Dyson, Release 1.0

"Impressive user interface... the system offers a lot of  
innovative ideas and solid functionality"

Seybold Report

"Awesome in its simplicity"

Bove & Rhodes Report

Call now for our special introductory offer

800 772-5335



Pages Software Inc, 9755 Clairemont Mesa Blvd., San Diego, CA 92124 USA

Pages is a trademark of Pages Software Inc

WordPerfect is a trademark of WordPerfect, Inc. FrameMaker is a trademark of Frame Technology Corp

Circle 59 on reader service card

## NEXTWORLD

Vol. 4, No. 4 APRIL 1994

President Gordon Haight  
Editor in Chief Daniel Ruby

### EDITORIAL

Managing Editor Eliot Bergson  
Senior Reviews Editor Dan Lavin  
Associate Designer Beth Kamoroff  
Assistant Editor Paul Curthoys  
Senior Contributing Editors Simson L. Garfinkel, Lee Sherman  
Contributing Editors Joe Barello, John Perry Barlow,  
Tony Bove and Cheryl Rhodes, Ben Calica,  
M Carling, Daniel Miles Kehoe, Scott Kim, Robert Lauriston,  
Charles L. Perkins, Rick Reynolds, Seth Ross

### ART AND DESIGN

Earl Office San Francisco, California

### PRODUCTION

Director of Manufacturing Jayne Boyer  
Manufacturing Manager Hilal Sala  
Advertising Coordinator David Zink

### ADVERTISING SALES

Associate Publisher Steve Fricke  
415/267-1784  
Western Sales Manager Laurie Eddy  
415/978-3188

### ADMINISTRATION

Operations Manager Graciela Eulate  
Director of Information Services Kevin Greene  
IMI Corporate Manager Barel Libes

### CIRCULATION

Circulation Manager Catherine Huchting  
Single Copy Sales Director George Clark  
Single Copy Sales Representative Marty Garcher  
Circulation Assistant Jason Paul Muscat

### IDG CORPORATE ADMINISTRATION

Director of Finance Vicki Peilen  
Financial Analyst Madeleine Buckingham  
Accounting Manager Pat Murphy

To reach NeXTWORLD by mail or courier, use this address: NeXTWORLD, 501 Second St., San Francisco, CA 94107. You can also contact NeXTWORLD via the Internet at [nextworld@nextworld.com](mailto:nextworld@nextworld.com), via MCI mail at NeXTWORLD, or via fax at 415/978-3196. NeXTWORLD is published monthly by Integrated Media, 501 Second St., San Francisco, CA 94107, a subsidiary of IDG Communications, the world leader in information services on information technology. Basic subscription rate is \$39.90 for 12 monthly issues. Foreign orders must be prepaid in U.S. funds with additional postage. For Canada, add \$15. All other foreign orders, add \$40 for airmail and \$15 for surface delivery. Fax 415/442-1891 to charge VISA/MC. For new subscriptions or subscriber-service questions, call toll-free 800/685-3435; in Tennessee or from outside the United States, call 615/377-3322; or write P.O. Box 5038, Brentwood, TN 37024-9817. Application to mail at Second Class postage rates pending at San Francisco and additional mailing offices. For permission to quote or reproduce editorial material from NeXTWORLD, send a written request stating the issue date, article, page number(s), and exact text of the material to: Reprints and Permissions, NeXTWORLD Production, 501 Second St., San Francisco, CA 94107. For back issues of NeXTWORLD, write to: Back Issues, NeXTWORLD Circulation; \$8 per issue; \$18 per issue outside U.S. prepaid. POSTMASTER: Send address changes to NeXTWORLD, P.O. Box 5038, Brentwood, TN 37024-9817 or call 615/377-3322. Editorial and business offices: 501 Second St., San Francisco, CA 94107; 415/243-0600. NeXTWORLD is a publication of Integrated Media. Printed in the United States of America. NeXTWORLD is a trademark of NeXT and is used under license. This publication is not affiliated with NeXT. Copyright © 1994 Integrated Media. All rights reserved. Canadian GST #124669433.

### IDG: WORLDWIDE

NeXTWORLD is a publication of International Data Group, the world's largest publisher of computer-related information and the leading global provider of information services on information technology. International Data Group publishes over 194 computer publications in 62 countries. Forty million people read one or more International Data Group publications each month. International Data Group's publications include: ARGENTINA'S Computerworld Argentina, Infoworld Argentina; ASIA'S Computerworld Hong Kong, PC World Hong Kong, Computerworld Southeast Asia, PC World Singapore, Computerworld Malaysia, PC World Malaysia; AUSTRALIA'S Computerworld Australia, Australian PC World, Australian Macworld, Network World, Reseller, IDG Sources; AUSTRIA'S Computerwelt Osterreich, PC Test; BRAZIL'S Computerworld, Mundo IBM, Mundo Unix, PC World, Publish; BULGARIA'S Computerworld Bulgaria, Edworld, PC & Mac World Bulgaria; CANADA'S Direct Access, Graduate Computerworld, InfoCanada, Network World Canada; CHILE'S Computerworld, Informatica; COLOMBIA'S Computerworld Colombia; CZECH REPUBLIC'S Computerworld, Elektronika, PC World; DENMARK'S CAD/CAM WORLD, Communications World, Computerworld Danmark, LOTUS World, Macintosh Produktkatalog, Macworld Danmark, PC World Danmark, PC World Produktguide, Windows World; ECUADOR'S PC World; EGYPT'S Computerworld Middle East, PC World Middle East; FINLAND'S MikroPC, Tietoviikko, Tietoverkko; FRANCE'S Distributique, GOLDEN MAC, InfoPC, Languages & Systems, Le Guide du Monde Informatique, Le Monde Informatique, Telecoms & Reseaux; GERMANY'S Computerwoche, Computerwoche Focus, Computerwoche Extra, Computerwoche Karriere, Information Management, Macwelt, Netzwerk, PC Welt, PC Woche, Publish, Unit; HUNGARY'S Alaplap, Computerworld SZT, PC World; INDIA'S Computers & Communications; ISRAEL'S Computerworld Israel, PC World Israel; ITALY'S Computerworld Italia, Lotus Magazine, Macworld Italia, Networking Italia, PC World Italia; JAPAN'S Computerworld Japan, Macworld Japan, SunWorld Japan, Windows World; KENYA'S East African Computer News; KOREA'S Computerworld Korea, Macworld Korea, PC World Korea; MEXICO'S Compu Edicion, Compu Manufactura, Computacion/Punto de Venta, Computerworld Mexico,

MacWorld, Mundo Unix, PC World, Windows; THE NETHERLAND'S Computer! Totaal, LAN Magazine, MacWorld; NEW ZEALAND'S Computer Listings, Computerworld New Zealand, New Zealand PC World; NIGERIA'S PC World Africa; NORWAY'S Computerworld Norge, C/World, Lotusworld Norge, Macworld Norge, Network, PC World Ekspress, PC World Norge, PC World's Product Guide, Publish World, Student Data, Unix World, Windowsworld; IDG Direct Response; PANAMA'S PC World; PERU'S Computerworld Peru, PC World; PEOPLE'S REPUBLIC OF CHINA'S China Computerworld, PC World China, Electronics International, China Network World; IDG HIGH TECH BEIJING'S New Product World; IDG SHENZHEN'S Computer News Digest; PHILIPPINE'S Computerworld, PC World; POLAND'S Computerworld Poland, PC World/Computer; PORTUGAL'S Cerebro/PC World, Correo Informatico/Computerworld, MacIn; ROMANIA'S PC World; RUSSIA'S Computerworld-Moscow, Mir - PC, Sety; SLOVENIA'S Monitor Magazine; SOUTH AFRICA'S Computing S.A.; SPAIN'S Amiga World, Computerworld Espana, Comunicaciones World, Macworld Espana, NeXTWORLD, PC World Espana, Publish, SunWorld; SWEDEN'S Attack, ComputerSweden, Corporate Computing, Lokala Naverk/LAN, Lotus World, MAC&PC, Macworld, Mikrodatorn, PC World, Publishing & Design (CAP), Datalingenjoren, Maxi Data, Windows World; SWITZERLAND'S Computerworld Schweiz, Macworld Schweiz, PC & Workstation; TAIWAN'S Computerworld Taiwan, Global Computer Express, PC World Taiwan; THAILAND'S Thai Computerworld; TURKEY'S Computerworld Monitor, Macworld Turkiye, PC World Turkiye; UKRAINE'S Computerworld; UNITED KINGDOM'S Lotus Magazine, Macworld, SunWorld; UNITED STATES' AmigaWorld, Cable in the Classroom, CD Review, CIO, Computerworld, Desktop Video World, DOS Resource Guide, Electronic News, Federal Computer Week, Federal Integrator, GamePro, IDG Books, Infoworld, Infoworld Direct, Laser Event, Macworld, Multimedia World, Network World, NeXTWORLD, PC Games, PC Letter, PC World, Publish, Sumeria, SunWorld, SWATPro, Video Event; VENEZUELA'S Computerworld Venezuela, MicroComputerworld Venezuela; VIETNAM'S PC World Vietnam.



**A**s NeXT seeks to increase its income in areas outside its core system-software business, it is beginning to find itself in competition with its own partners. Here's a typical story.

A corporation in the Northeast, having recently purchased a substantial number of NEXTSTEP seats, needs to establish a program for training its developers to use the software. One of NeXT's Object Channel partners submits a bid for a comprehensive training program. It turns out, however, that NeXT's own Professional Services group wants the training contract for itself.

The partner is in a quandary. It could choose to compete by offering its services at a discounted price. But doing so would antagonize the local NeXT sales force, which needs that business to meet its quota for services revenue. At the same time, the partner needs to maintain a close working relationship with the sales force so it will be brought in on consulting and integration contracts for other customers.

Result: The partner quietly withdraws its bid, thereby losing out on a substantial revenue opportunity.

What we have here is a classic case of channel conflict. NeXT needs partners to help support its sales. It also needs revenues in the very same business segments that provide a living for the partners. This is already an issue in the services sector, and we can expect to see more conflict in the future in other areas, such as application software.

For the hard-pressed partners, the solution is simple: NeXT should stick to its core business of developing and selling NEXTSTEP and leave the aftermarket opportunities for third-party suppliers. In this case, however, simple is also simplistic. Why shouldn't NeXT have the opportunity to en-

hance its revenue base? More to the point, why shouldn't customers have as many options as possible, comparing offerings on the basis of quality and price?

The view from here is that competition is good, as long as the playing field is level. In the training example, the field is skewed in NeXT's favor. The partner is at a disadvantage because of the need to maintain a close relationship with the NeXT sales force. The customer is at a disadvantage because it has fewer choices of suppliers.

To level the field, NeXT should decouple the sale of NEXTSTEP from the sale of aftermarket services. This process may entail establishing separate sales forces for separate products and services. Or it could set different commission structures for the different lines of business.

Despite the grumbling from its partners, it is not necessary for NeXT to provide a protected market for its third parties. But it does need to provide a fair market.

In the end, it is not just a question of fair play. It is also a matter of strategic importance for NeXT. Yes, NeXT needs multiple revenue streams. But it also requires a strong

cast of financially secure partners.

Channel conflict is nothing unique to the NeXT market. Vendors on other computer platforms have struggled with the issue of competing with their own partners in application software and other aftermarket segments. The key to the solution is recognizing the problem and carefully managing the channel so that everyone is able to compete on an equal basis.

As long as NeXT is seen as one among a group of suppliers, without an inside track, then everyone can win — most of all the customer. ♦

DAN RUBY is NeXTWORLD's editor in chief.

## Managed Competition

DAN RUBY

**IS YOUR  
INTEL-BASED  
NEXTSTEP  
ENVIRONMENT  
MISSING  
SOMETHING?**

**High resolution, true color for the NeXTStep computing environment.**

Starved for high quality images in your NeXTSTEP environment? Hungry for high resolution? Crave 24-bit color? Then look no further.

Only miro can give you graphics cards to meet the most demanding applications under NeXTStep. With the miroCRYSTAL 32s you can enjoy the best your system has to offer.

With a powerful 4MB of VRAM and our bulletproof NeXTStep driver, the miroCRYSTAL 32s allows you to drive your display at 1024 x 768 pixels resolution with full 24-bit color (16.7 million colors). Or display at an eye-popping 1408 x 1024 pixels at 65,536 colors. Either way, we're ready to give you the high performance graphics you need.

Call today and get ready to enjoy true high performance graphics!

**Call 800-862-5678**

Please refer to source code: NXT



**miroCRYSTAL 32s**  
VESA Local Bus or PCI  
**Just \$899**

The miro name, logo and miroCRYSTAL 32s are registered trademarks of miro Computer Products, Inc. All other trademarks are the property of their respective owners. © 1994 miro Computer Products, Inc. 955 Commercial St., Palo Alto, CA 94303. For technical information call 1-800-249-MIRO.

Circle 93 on reader service card

Dealer inquiries welcome.



## Smarter than that

Regarding your review of StayInTouch 1.25 in the January 1994 issue ("Contact Sports"), we found the following inaccuracies:

- StayInTouch has compact windows (expert windows) just like SBook does, available in the version reviewed.

- StayInTouch can import from a variety of sources, the system is configurable, and it sports an import language that affords absolute control over how data is imported into the application. If StayInTouch doesn't import a particular data format, it has always been our policy to provide the customer with either a free data conversion or a means to convert the data.

- StayInTouch has no artificial limit on the amount of data that it can import (beyond computer speed and available memory). Our in-house workouts routinely test with databases that contain over 15,000 records (4.19MB address files), and we have not experienced any of the of the choking problems implied in the review. Version 2.0, which shipped in February, introduces more effi-

cient file loading; our 15,000-record file takes less than a minute to load.

- StayInTouch not only recognizes U.S. addresses and phone numbers, but Canadian and British formats as well. Other European countries with similar addressing formats may work as well. The software also provides intelligent dialing for international phone numbers.

- No software application that dials a phone with a modem "knows" when a voice call is finished. The article implies that SBook can detect this condition and reset the port. StayInTouch 2.0 corrects the inconvenience of having to reset the lock before making a new call.

- StayInTouch has always allowed users to alphabetize each entry

in any way that they see fit. They have complete control of sort orders by either the name field or the browser's record label.

As for your positioning of our product, your evaluation in no way represents the product emphasis or the market orientation of StayInTouch. If a user seeks a certain feature that our product does not offer, then a competitor's product may be a better choice for that particular user, regardless of categorization. The end user can make a very competent evaluation of which product is better for his needs – demos are free for the asking.

This decision is not NeXTWORLD's to make or endorse.

I encourage you to focus on the comprehensive features and benefits afforded to users of any reviewed product. Your PC-counterpart publications seem to do this well.

MANUEL ALBERT RICART  
President, SmartSoft  
Milwaukee, Wisconsin

*We stand by the review, which was based on the four beta versions of StayInTouch 1.25 that we worked with over the period of a month. The features described were either not in place or not working. Given the diversity of the NeXTSTEP market, we believe it is the magazine's job to evaluate applications on the basis of their appropriateness for different market segments. – NW*

## Ultimate upgrade path

I own a NeXTcube with tons of expensive peripherals and software. I have used the Cube as a home computer for daily use and for business for two-and-a-half years with no hassles at all.

The only wish I had for my Cube is color and maybe more processing power, but to upgrade from 25MHz to 33MHz is not really necessary. So why do I have to buy a new box just to get color, especially when the box

is near-equally powered and the alternative means "Intel inside"? Remember the idea behind a black Cube. The simplest upgrade path ever – change just one board, nothing more. The chassis of the Cube was built for the future, not the garbage.

Why is there no company that will construct a Pentium board to fit in the Cube – and SPARC, PA-RISC, and PowerPC boards later? I'm not alone with my Cube. Some thousands of other users would love to upgrade to the next generation of processors.

The marriage with Sun and NeXT is a big step forward, but a port to PowerPC would be even more interesting because the hardware should be less expensive. I look forward to the marriage of NeXT and Apple. That would be the last big deal of the century.

Don't good old NeXT customers deserve a bonus or goody?

MARTIN BACHMANN  
Lucerne, Switzerland

## Early adopter

In my house, the "reading room" happens to be the bathroom. So when my son, Levi, who we are potty training, sat down, picked up NeXTWORLD, opened it up, and acted like he was reading it, I just had to take a picture and send it to you. I guess you could say that NeXT users aren't made, they're born.

JERALD DAWSON  
Chicago



NeXTWORLD welcomes your comments. Please mail them to Letters at NeXTWORLD, 501 Second St., San Francisco, CA 94107, or e-mail them to [letters@nextworld.com](mailto:letters@nextworld.com).

CHARTSMITH

Now SHIPPING  
v1.1 WITH API

**BE CHART SMART!**

CHARTSMITH sets the standard for presentation-quality charting graphics, and delivers a flexible and intuitive user interface. CHARTSMITH includes:

- Full Support for NeXTSTEP Object Links
- Mixed Series Graphs
- Complete Annotation Set
- Many Chart Types
- Object Oriented API
- Full Template Capabilities

Liberal drag-and-drop support for colors, images and data make CHARTSMITH a benchmark for ease-of-use. All the features you want, all the simplicity you demand. Be chart smart - get CHARTSMITH.

Call or email now to receive a demo copy of CHARTSMITH!

**BLACKSMITH**  
Major Credit Cards accepted  
E-Mail: [info@blacksmith.com](mailto:info@blacksmith.com)  
Voice: (800) 619-6147 (703) 524-6147  
2100 Lee Highway • Suite 201 • Arlington, VA 22201

NeXTSTEP is a registered trademark of NeXT Computer, Inc. in the U.S. and other countries. CHARTSMITH is a trademark of BLACKSMITH, Inc.

Circle 86 on reader service card



# Evaluating Intel Hardware

PURCHASING DECISIONS

SINCE THE BLEACHING OF NeXT, MORE THAN 50 INTEL-BASED PC MANUFACTURERS have announced NEXTSTEP compatibility, offering upward of 200 different configurations. Corporate IS managers have, in turn, been faced with the dizzying chore of establishing evaluation methods to find the brands and configurations that best meet their needs.

Many buyers have set up formal laboratory testing procedures, by which NEXTSTEP jocks run benchmark packages on the machines, put the boxes through elaborate I/O stress tests, and generally try their best to hang and crash the systems. Many hardware makers claim smooth NEXTSTEP capability but few actually provide it; testers found that many PCs ran NEXTSTEP poorly or not at all.

"We spent about six months evaluating vendors who were touting systems as being able to run NEXTSTEP," says John Keazirian, executive vice-president for NationsBanc-CRT, a Chicago-based derivatives-trading firm. The lab ran software applications, measured video refresh, performed throughput stress testing, compared the ease of loading NEXTSTEP, counted how many times the machines crashed or hung – and on and on.

After settling on the brand that held up best under the firm's testing, NationsBanc worked with the vendor to provide the configurations that met the organization's particular criteria for memory, disk space, monitor type, and a few other technical requirements specific to the firm's custom-applications deployment.

Testers say that benchmark packages, such as Drive Performance and NxBench, are an alternative to in-house testing procedures and provide users with some, but not all, of the measurements they need.

"Certain motherboards are slow, for example, and others will scream, so some of these dhrystone tests do uncover things like that," says Steve Bonsid, consulting systems engineer for Stratus Computer, a Marlboro, Massachusetts-based maker of fault-tolerant computers.

## IMPORTANT FACTORS CITED BY BUYERS OF NEXTSTEP FOR INTEL HARDWARE

- PENTIUM UPGRADEABILITY
- CACHE SIZE
- VIDEO-DISPLAY SIZE AND NUMBER OF PIXELS
- WINDOWS COMPATIBILITY AND PERFORMANCE
- 2.88MB FLOPPY DRIVE
- ETHERNET, SCSI, AND CD-ROM PERFORMANCE
- SPEED OF LOADING NEXTSTEP
- CRASH-RECOVERY AND FILE-PROTECTION SYSTEMS
- PERFORMANCE RUNNING NEXTSTEP APPLICATIONS

But endless testing and measuring is not the only way to evaluate Intel computers, says William Young, senior systems engineer at Trident Data Systems, a long-standing NEXTSTEP integrator in Los Angeles.

"You could have done almost all that on paper," he says. "I would probably have sent out the machines more quickly to customers for feedback on running the systems in their environments."

NeXT is taking steps to support both customers and manufacturers on white hardware, according to Bob Lawton, who, as NeXT's strategic technology manager, is in charge of putting NEXTSTEP onto

Intel machines. Much of the success that any given brand and configuration will have running NEXTSTEP depends on how well NeXT and its vendors work together.

In the future, buyers will see four levels of endorsement from NeXT for Intel hardware brands. The first, of course, is nothing at all: no stickers, logos, or any other indication from NeXT that it knows how well NEXTSTEP will run on that particular machine. This does not mean NEXTSTEP won't work, or even work well; it just means NeXT has not tested the brand or its configurations.

One of the most common sights will probably be stickers that identify

brands as NEXTSTEP Compatible. In this case, the vendors have tested their own systems for compatibility and listed the results with NeXT. But NeXT will not claim any special expertise about the compatibility of these brands.

NeXT offers the most security for machines classified as NEXTSTEP Certified and NEXTSTEP Installed. This classification is for brands and configurations that NeXT has studied, tested, debugged, approved, and agreed to support. Under the terms of a new policy announced in January, NeXT will provide 30 days of free support to customers who buy one of the certified configurations.

"If you install a certified system and you have a problem with it, then we own the problem," Lawton says.

Lawton stresses that NeXT is not interested in rating the boxes on specific details of performance – whether one machine is faster than another on a given benchmark. Strict performance issues arise from particular user needs, he says.

When testing machines, experienced buyers say that they are also testing the manufacturers themselves. How closely and attentively the vendor works with the buyer during the evaluation period is an important concern for most buyers, and it reveals much about the vendor.

"A lot of the vendors we've dealt with were just disorganized and clueless," says Bonsid. "I'm not going to chase anyone to give them my business, because I know once they sell me something, I'm going to be chasing them every time I need them."

These concerns only point to historic differences found in the PC and workstation worlds. Architecturally, these Intel boxes are high-end PCs. But NEXTSTEP users do not buy PCs, high-end or otherwise – they buy workstations. It's not just a niggling matter of nomenclature; it's a critical distinction.

"The more vendors can make the PC experience more like buying a Sun or an HP workstation, the more they can attract enterprise-type customers," says Trident's Young. "We're looking for a whole package – we don't want to get into the business of swapping cards, or stocking them, and having people who worry about that stuff."

Customers say that NEXTSTEP users will help force changes in the Intel market, as vendors will have to begin selling more integrated systems. Users will also reap big benefits.

As the market evolves, information strategists must consider the upcoming NEXTSTEP RISC machines from major companies like Hewlett-Packard and Sun Microsystems. Young, for example, has seen working prototypes of HP's NEXTSTEP-ready RISC computer – and he's impressed.

"They're nothing but fast," Young says. "But, as nice as they are, we need machines now." And "now" means Intel.

Bonsid says it's more critical for his firm, with offices on several continents, to stick with the platform that's easiest and least expensive to support worldwide – and he believes that Intel will remain the world's standard.

Overall, customers say that buying NEXTSTEP for Intel machines is more than just a hardware, support, or standardization decision – it's a systems decision. "Generally it isn't the benchmarks or having the largest screen or anything like that," says Young. "It's the whole package." ♦

by PAUL KARON

**Real World is a continuing series that looks at the nuts-and-bolts issues of implementing NEXTSTEP solutions in large organizations.**

COMMUNITY

Real World/Issues and Answers  
in NEXTSTEP Implementation



# Introducing O.C.R. That's P.D.Q. Not D.O.A.

Whether you've been using a \$99 OCR program, or a \$20,000 turnkey system, you're probably used to getting text without proper formatting and with so many errors that you'd just rather type it over and forget it. But don't give up, because now there's eXTRAREAD from GS Corporation.

eXTRAREAD is based on the award-winning Recognition Toolkit from ExperVision, Inc., widely recognized as one of the most accurate and thorough OCR engines available today. Just scan your documents and let eXTRAREAD churn away at your TIFF or fax files. eXTRAREAD maintains all the original formatting, including fonts, styles, tabs, and columns. You can edit text, paste rulers and spell check right in the preview window. You'll get fully formatted, Rich Text documents that you can import into your favorite word processor or database.

All this and pretty darn quick, too!

Call 800.999.8844 to order your copy today.  
Suggested List Price: \$695.

All trademarks are the property of their respective owners.

**eXTRAREAD**  
BY GS CORPORATION

929 Sir Francis Drake Blvd., C342  
Kentfield, CA 94904 USA  
415.257.4700

Circle 8 on reader service card

## Chaos or Control?

COMMENTARY

WORKSTATION 2000 HAS SOLD HUNDREDS OF PRELOADED INTEL-BASED WORKSTATIONS INTO SOME OF NeXT'S LARGEST accounts. As an informed player in the marketplace, I also hear from a lot of people who purchased NEXTSTEP and a PC clone and became frustrated with their difficulties in loading the operating system. Some even give up and just load Windows, muttering that NEXTSTEP is an impossible OS. I wonder if these unhappy potential users are hurting NeXT at a time when growth is so important.

Currently, anyone with a valid resale certificate can purchase NEXTSTEP from a distributor, install it on a system, and resell it preinstalled on a '486 or Pentium. A lot of the calls that we get asking for help come from this quarter: customers who have bought systems from small vendors with limited NEXTSTEP expertise. Both these unhappy customers and inexperienced vendors hurt NEXTSTEP's reputation in the marketplace.

So the question arises: Should NeXT continue to allow unrestricted sales of NEXTSTEP? The answer is still yes.

NeXT has already taken steps toward restricting distribution by classifying systems preloaded by the manufacturer as "certified," while other NEXTSTEP-compatible systems are merely "listed" by NeXT. According to NeXT, the different ratings affect how vigorously NeXT will stand by its OS on that particular machine. But which machines make the certified list seems to depend less on how well the hardware runs NEXTSTEP than the PC-market presence of its manufacturer. This marketing reality offers few benefits to the end user.

Large PC manufacturers (Compaq, Dell, and so forth) think in terms of millions of units, not tens of thousands. The PC marketplace (dominated by DOS, Windows, and other future large viruses) is huge and will continue to dwarf the UNIX marketplace in the foreseeable future. And even within the UNIX mar-

ketplace, NEXTSTEP is well positioned but still has limited acceptance in comparison with market leaders like HP and Sun.

Given these current realities, NEXTSTEP will languish on the shelf because of neglect and a lack of energetic marketing by PC manufacturers. They will always put their resources to work where their revenue comes from—promoting Microsoft products.

This fact becomes clearer when you look at NeXT's target customers: large firms that need to develop mission-critical custom apps. Because of their focus on development rather than productivity, they are among the most sophisticated of computer buyers. And when it comes to selecting platforms and vendors for development and deployment, their selection process is thorough and exhaustive. They prefer to buy their systems from hardware vendors that are NEXT-



Workstation 2000's Tim Finnegan

STEP-oriented and as technically competent as they are—increasingly, firms in NeXT's VAR channel.

Yet it is the VAR channel that would be devastated by decisions to restrict NEXTSTEP distribution. Time and again, at large and small accounts all across North America and Europe, NEXTSTEP-savvy VARs have stepped in to help close sales. Time and again, these VARs have answered the "help me" phone calls of dismayed customers. And time and again, these VARs have pushed the OS with the kinds of resourceful marketing that big PC manufacturers seldom undertake.

NeXT's field-sales organization is still small but is required to produce some pretty impressive numbers this year. A VAR that has staked its corporate future on NEXTSTEP systems also has a vested interest in helping NeXT achieve these goals. VARs take a dedicated approach to the sales process and, by definition, add value. They have the technical staff that can perform the customization that is usually required for a large deployment. The relationship goes far beyond simply filling demand for hardware; the teamwork between the VAR and NeXT builds customer confidence and helps NeXT close the sale.

Ultimately, the marketplace will dictate the right channels for delivering NEXTSTEP systems to the growing customer base. Strong partners will grow and profit from NeXT's good decisions and new alliances—and the weak or incompetent players will disappear. Perhaps some fine-tuning of the distribution strategy for NEXTSTEP is in order, but restricting it too severely would damage some of the small but growing companies that have proven to be NeXT's strongest proponents. And then we'd never know just how much they might have contributed to NeXT's future success. ♦

TIM FINNEGAN is president of Workstation 2000. He was a district sales manager at NeXT from 1990–1993. Before that, he worked at HP and Apollo.

PHOTOGRAPH BY SUSAN WERNER



# Step into objects

Catch the wave of  
objects for the enterprise.  
NeXTWORLD – the only  
magazine dedicated to  
NEXTSTEP and OpenStep.

## Mission – Critical Information

### ENTERPRISE PARTNER PROGRAM

• Site subscriptions for information systems managers • Discounted subscription rates • Membership on NeXTWORLD Editorial Advisory Board

**Yes!** My organization is creating competitive advantage with NEXTSTEP. Please send in-depth information about the NeXTWORLD Enterprise Partner Program.

Name \_\_\_\_\_

Title \_\_\_\_\_ Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ Email \_\_\_\_\_

B40401

## NeXTWORLD

Subscription rates and detailed information also available by  
Telephone: 1-800-685-3435  
Fax: 1-615-377-0525  
Email: [subscrip@nextworld.com](mailto:subscrip@nextworld.com)

**NeXTWORLD  
Enterprise  
Partners –  
taking the  
lead for  
objects in the  
enterprise**

## Create Demand for NEXTSTEP

### CHANNEL PARTNER PROGRAM

• Bulk subscription rates for the NEXTSTEP channel • Timely, direct delivery to your site • Add value for your customers

**Yes!** My organization is adding value in the NEXTSTEP channel. Please send in-depth information about the NeXTWORLD Channel Partner Program.

Name \_\_\_\_\_

Title \_\_\_\_\_ Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ Email \_\_\_\_\_

B40402

## NeXTWORLD

Subscription rates and detailed information also available by  
Telephone: 1-800-685-3435  
Fax: 1-615-377-0525  
Email: [subscrip@nextworld.com](mailto:subscrip@nextworld.com)

**NeXTWORLD  
Channel  
Partners –  
fulfilling the  
promise of  
object-oriented  
computing**

## The Source for NEXTSTEP Users

### INDIVIDUAL SUBSCRIPTIONS

• \$29.95 for 12 monthly issues • 25% off the regular subscription price

**Yes!** Please start my subscription to NeXTWORLD for just \$29.95. Send no money now. We'll bill you later.

Name \_\_\_\_\_

Title \_\_\_\_\_ Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ Email \_\_\_\_\_

B40403

## NeXTWORLD

For Canada add \$15 (includes 7% GST tax). All other international orders must be pre-paid in U.S. funds only and add \$40 for airmail delivery or \$15 for surface mail delivery. DO NOT SEND CASH. Check

**NEXTSTEP  
Enthusiasts –  
the dream  
lives on for  
objects on the  
desktop**





**BUSINESS REPLY MAIL**  
FIRST CLASS MAIL PERMIT NO. 237 BRENTWOOD, TN

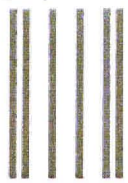
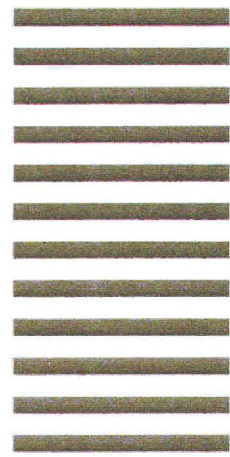
POSTAGE WILL BE PAID BY ADDRESSEE

**NEXTWORLD**

SUBSCRIPTION DEPARTMENT  
P.O. BOX 5038  
BRENTWOOD, TN 37024-9817



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES



**BUSINESS REPLY MAIL**  
FIRST CLASS MAIL PERMIT NO. 237 BRENTWOOD, TN

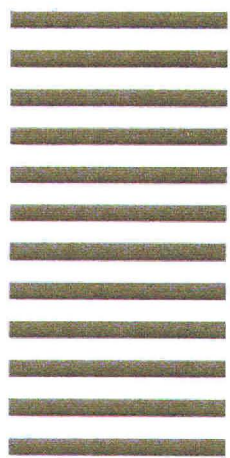
POSTAGE WILL BE PAID BY ADDRESSEE

**NEXTWORLD**

SUBSCRIPTION DEPARTMENT  
P.O. BOX 5038  
BRENTWOOD, TN 37024-9817



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES



**BUSINESS REPLY MAIL**  
FIRST CLASS MAIL PERMIT NO. 237 BRENTWOOD, TN

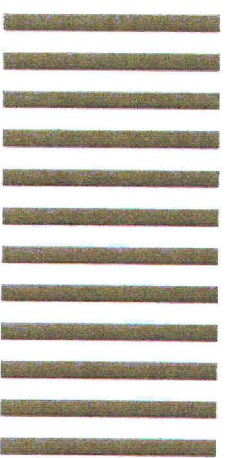
POSTAGE WILL BE PAID BY ADDRESSEE

**NEXTWORLD**

SUBSCRIPTION DEPARTMENT  
P.O. BOX 5038  
BRENTWOOD, TN 37024-9817



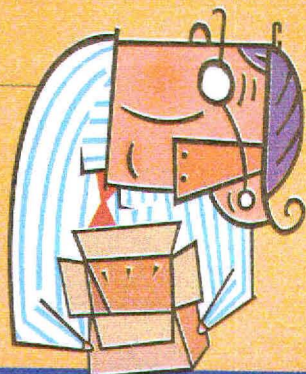
NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES



**Step Into Objects**

**NEXTWORLD**





COMMUNITY

## NEW IN SHRINKWRAP

FEBRUARY 1 TO MARCH 1

### CONNECTIVITY, COMMUNICATIONS, AND EMULATION

TELECOMM 1.01

File-transfer and terminal-emulation software

Alembic Systems International

303/799-6223

WATCHME 1.0

Screen-recording software

Otherwise

206/647-9436

3270VISION 3.2

IBM 3270 terminal-emulation software

5250VISION 1.2

IBM AS/400 5250 terminal-emulation software

Conextions

508/689-3570

### DATABASE AND INFORMATION MANAGEMENT

PAPERSTIGHT 1.5

Paperless-office tools

Alembic Systems International

303/799-6223

PENCIL ME IN API

API for scheduling app

Sarrus Software

415/345-8950

STAYINTOUCH 2.0

Update to personal-information manager

SmartSoft

414/964-8864

### OBJECTS, PALETTES, AND KITS

DOLPHIN KIT 3.21

Fat-binary and feature upgrade to

development tools

Dolphin Technologies

310/441-9021

3270PALETTE 1.0

ObjectWare tool kit for IBM 3270 mainframe

connectivity

5250PALETTE 1.0

ObjectWare tool kit for IBM AS/400 5250

connectivity

Conextions

508/689-3570

### PUBLISHING AND GRAPHICS

EXTRAPRINT CJ10 PR1

Printer driver for the Canon CJ10

EXTRASCAN CJ10 PR1

Scanning driver for the Canon CJ10

EXTRAPRINT CANON A1

Canon A1 BubbleJet printer driver

EXTRAPRINT CLC 300 & 500

Printer driver for Canon CLC series

EXTRAPRINT LASER CANON

Drivers for NX- and BX-engine printers

EXTRAPRINT LASER HP

Drivers for DeskJet and LaserJet series printers

GS Corporation

415/257-4700

### SCIENCE AND ENGINEERING

MAGELLAN 2.0

Real-time industrial-process control

IFE Technologies

331/47.08.92.50

### TOOLS AND LANGUAGES

CRASH CATCHER

Objective-C debugger

Whitelight Systems

415/321-2183

Alembic Systems International

303/799-6223

ILLUSTRATION BY GORDON STUDER

## Brave New Worlds

### ON THE NET

**It's . . . SHOWTIME, FOLKS!** STEVE ANNOUNCED the 1994 NeXTWORLD Expo (scheduled for June 20-23) in a posting. Much speculation regarding the language of Steve's epistle and what it portends (no, not the use of the royal "we"; everyone knows what that portends). Bigger and better are both promised confidently for this year. But what is an "Enterprise Object" and what

does "Enterprise Objects Framework" mean? Has NeXT dropped the OOFS model in favor of an RDBMS-based system? ("Come one, come all, and see for yourself!" sez Steve.) "Hear about PDO on HP, Sun, DEC, NCR, Data General, and others." No mention of NEXTIME, though it was promised (well, not quite) by Steve for the 1994 Expo in a comment at last year's extravaganza. (Of course, NeXT's software engineers may have had other things on their minds . . .)

**Labor omnia vincit.** In a thread entitled "NeXT giving up totally?" the relative merits/liabilities of programming **Page 10**

## Do Presentation Graphics Present You With Nothing But Deadline Problems?

eXTRASLIDE makes outputting your slides the easiest and fastest part of the presentation process. Whether you're using Concurrence, Virtuoso, or other applications, just print to the Polaroid CI-5000S Film Recorder the way you would print to any other printer - even over a network! Now, you can expose, process, and mount all your slides in minutes.

As a stand-alone application, eXTRASLIDE lets you drag-and-drop TIFF and EPS files into the file queue, and tweak each image individually. You can scale and frame your images in real time, and set custom background

colors using the standard NEXTSTEP color picker.

What's more, eXTRASLIDE incorporates a new color management technology that enables the application to perform on-the-fly color correction at output time. This ensures that the colors you see on your monitor are the same colors your audience will see on the projection screen.

To order your copy of eXTRASLIDE, call **800.999.8844**  
Suggested List Price: **\$5,995.** / Software only: **\$995.**

eXTRASLIDE comes with the Polaroid CI-5000S film recorder and a 35 mm camera back. GS Corporation also offers a number of accessory packages for eXTRASLIDE, including automatic film processors, slide mounters, overhead viewers, camera backs, and starter film packs. All trademarks are the property of their respective owners.

# eXTRASLIDE

BY

929 Sir Francis Drake Blvd., C342  
Kentfield, CA 94904 USA  
**415.257.4700**

Circle 49 on reader service card



# THE SEARCH IS OVER!

Tired of trying to find a needle in a haystack? Now you can organize everything you need at your fingertips with Collaggi Palette. No more searching through all your directories every time you need something.

**TIFF**

It's really easy to use, too. All you have to do is drag-and-drop the items you use most frequently onto the Palette. Organize things like clip-art, scans, document rulers, index cards, or e-mail addresses. Since you can easily customize Collaggi Palette, the possibilities are limitless. Once you have everything organized the way you want

**EPS**

it, just drag-and-drop the needed elements into your e-mail messages, memos, reports, presentations or other documents.

**SND**

Not enough room in your Program Dock? That's OK... Collaggi Palette also keeps track of your favorite applications so you can launch them when needed. Perhaps the best news of all is that Collaggi Palette costs only \$199.

Now that you've found it, here's how to get it—call GS Corporation at 800.999.8844 and order your copy today.

All trademarks are the property of their respective owners.

**Collaggi**

**PALETTE**  
BY GS CORPORATION

929 Sir Francis Drake Blvd., C342  
Kentfield, CA 94904 USA  
415.257.4700

Circle 30 on reader service card

## Talent Spin-off

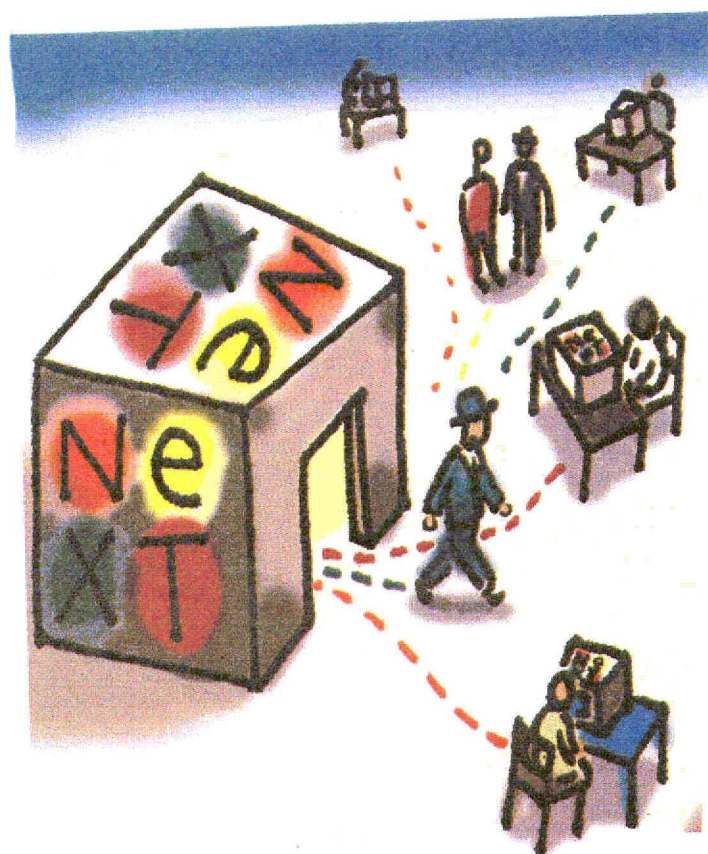
EMPLOYMENT TREND

NeXT's PERSONNEL ROSTER MAY HAVE SHRUNK OVER THE PAST SEVERAL YEARS, BUT DEDICATION to the NEXTSTEP market remains unflagging, even among the company's dearly departed. As salespeople, system engineers, and programmers move on from the company, many ex-NeXT employees are remaining in the community, making their way into niches in consulting, development, and sales within the third-party market.

Some, like John Pierce, president of Alembic Systems International, have even gone on to lead companies. "[This kind of pattern] is common when you have a new technology and you're creating a new market," says Pierce, formerly NeXT's district sales manager for the Rocky Mountain region. "And it's not just a job market, but a market of opportunities.

There's a lot of money out there to be invested, and that will only increase. The people in the know are taking advantage of it right now."

NeXT considers this emerging trend to be an indication of positive growth for its market. "It's a sign of really good health for any computer company when people can find growing opportunities within the market," says Ron Weissman, NeXT's director of corporate marketing. "In emerg-



ing markets, entrepreneurs cause growth. It certainly happened with Apple."

Although the NeXT community is more solid than the Macintosh community, Pierce says, it's facing a more fundamental paradigm shift, which takes longer to happen. "A lot of people don't understand that, but I've learned that you should never say never," he adds.

Pierce moved to Alembic, a value-added distributor of third-party NEXTSTEP software, because it presented an "interesting challenge." Since arriving there last September, he's concentrated on the company's profit centers, leaving the systems-integration game behind to develop a distribution and support business for third-party products. Alembic provides global distribution for NEXTSTEP software, adding services like a training center based in Denver and a technical-support hot line for all of its offerings.

"People like the idea of one-stop shopping – a place where they can call a 1-800 number for everything," says Pierce. "We add a lot of value to a sale, and third parties and customers like that."

Some ex-NeXT employees left because they felt they could do more for the company by working in other capacities. For Anne Sawyer, one of the developers of NeXTmail, leaving NeXT offered the opportunity to pursue her interests in the end-user community. "I felt I could do more toward NeXT's success by working outside of the company," she says. "Developing NEXTSTEP applications for the medical community, which is a personal interest of

ILLUSTRATION BY J. SCOTT CAMPBELL



mine, seemed like a good opportunity for me as well as NeXT."

In her role as senior technical architect at Systemhouse's Object Technology Center (OTC) in Boulder, Colorado, Sawyer designs and develops frameworks, kits, and protocols for the company's object repository – a core set of reusable objects that are used as the foundation of many OTC projects. Much of the technology she creates is deployed for Systemhouse's medical customers, ending up in software like an electronic patient chart and physician's tool kits that track patient care and help physicians measure the quality of their service.

NEXTSTEP takes the menial tasks away from developers and lets them concentrate on solving the hard problems, Sawyer says. "I've worked in other environments, and I love NEXTSTEP."

Siamak Farah echoes Sawyer's sentiments when he explains how he left NeXT to pursue a career as the president of a software company but returned after a mere five-month hiatus. Currently NeXT's district sales manager in Los Angeles, Farah started out working for the company as the district sales manager for New Jersey. After nearly four years, he left to head Step2, a company that develops dbPublisher, a database-publishing package.

"If they didn't do NEXTSTEP, I wouldn't have gone," Farah says. "I wanted to help NeXT from outside the company. When I talked to Steve about resigning, I said, 'I'm still working for you, I just happen to not be on your payroll.'"

At Step2, Farah worked to reorganize the company, fleshing out its sales force and increasing revenues. "I always had a development or management job prior to working for NeXT. While working there, I gained sales and marketing experience and, at Step2, I could use all my energy throughout the spectrum – I could use several different skill sets at once," he says.

He also helped direct the company's NEXTSTEP development efforts, demonstrating an alpha version of dbPublisher at last year's NeXTWORLD Expo. "In order to focus on NEXTSTEP, I even changed the company's name from DCS to Step2, as in the step after the next step," Farah adds.

Eventually, though, he felt that Step2 was spending too much effort on its Windows and DOS projects and wanted to work more with NEXTSTEP. "It's not enough to sit from afar and hope NeXT makes it," Farah explains. "I want to be in the trenches."

Others headed into the third-party market for more personal reasons. "I was just very tired emotionally," says Kris Younger, formerly a system engineer at NeXT. "It's a really cool place to work, and I have extremely fond memories of it because of all the friends I worked there with. But a lot of people burned out – it happens very easily there because of all the emotional energy that's required."

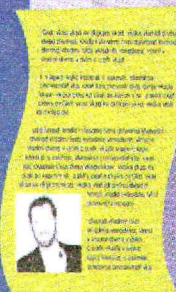
After a brief stint at Pencom, Younger ended up at Anderson Financial Systems, where's he's working on the development of WriteUp, the company's word processor.

"It's a small company, so I do all kinds of things all together at once: a little engineering, a little marketing and advertising, and a little sales," he says.

Despite a desire to pursue other interests, these ex-NeXT employees express a fundamental sense of commitment to NeXT's technology and desire to take part in ensuring its success. "I believe in NEXTSTEP . . . and I enjoy working in the NeXT community – they're heady people," says Alembic's Pierce. ♦

by PAUL CURTHOYS

# THE PROOF IS IN THE PRINTING!



**Faster printing than a PostScript cartridge. Higher quality graphics than a NeXT laser printer. eXTRAPRINT from GS Corporation gets better performance out of your Hewlett-Packard and Canon printers than you ever imagined possible.**

**Now there's no need to purchase expensive PostScript cartridges just to use your current printers as NEXTSTEP peripherals. Just install eXTRAPRINT, connect your printer, and print! No need to worry about downloading fonts and no need to worry that the page won't print. Now, what you see is really what you get! Even when printing on tabloid sized paper at 600 DPI. Printing graphics? No problem. Just select eXTRAPRINT's alternate screening method and your graphics will look better than ever before.**

**Versions of eXTRAPRINT are available for Hewlett-Packard Laser Jet series printers, HP DeskJet (color and b&w) printers, and Canon C110, CLC 300/500 series and BubbleJet A1 color printers. Also supported are the Seiko PhotoMaker and Shinko Colorstream. Custom device drivers are available.**

**800.999.8844**

**Prices vary and include the Adobe License. Discounts given for site licenses. Please call for price quotation. All trademarks are the property of their respective owners.**

**eXTRAPRINT**  
BY GS CORPORATION

929 Sir Francis Drake Blvd., C342  
Kentfield, CA 94904 USA  
415.257.4700

Circle 55 on reader service card



## On the Net

under NEXSTEP were debated (yes, again). Is NEXSTEP really object-oriented at the OS level? How do you define "simple app" vs. "complex app," and how difficult should each be to write? Some seem to get it, while others just complain (they seem to yearn for a development environment in which your average preteen can write a mission-critical custom app). And just what exactly is the relationship between Mr. Jobs and Mr. Christ anyway?

**Zee crystal ball shows all.** A somewhat related thread: "The REAL future operating systems" debated (quite acrimoniously at points) the relative ease of porting NEXSTEP vs. Win-

dows NT to other platforms. (BTW, fun to see some Microsoft employees joining us on comp.sys.next.) Ages into the thread, someone pointed out that portability is only one measure of the value of an OS. Most agree, however, that Windows is the "digital equivalent of a neon-infested suburban strip."

**Survival of the fattest.** Worries in another thread about the way a certain very large publisher of OSes and application software competes. What's the line between "aggressive competition" and illegal competition? What are the merits of unregulated competition? How free is our "free market" anyway? Do they really chain

employees to their desks and only allow them to read company docs?

**Jungle fever.** The most popular NEXSTEP Flavor of the Month seems to be "Tropical Reptile." Various Gecko sightings, various specs posted. What do hardware benchmarks mean anyway? Is a Gecko a better deal than a Pentium PC? And what does NEXSTEP in 24-bit color look like after undergoing "color recovery" to run on the 8-bit display system on Gecko? Wildly divergent opinions on this, so caveat emptor. Above all, "When/where can I get one?" Strong consensus emerges that HP charges astronomical prices for system upgrades, peripherals, and

other aftermarket add-ons. Read the fine print. Critical question for those who care about Life's most important issue - aesthetics - is: If Motorola hardware is black and Intel is called white, what color is the lizard? Red? Green? Or is it a chameleon?

**Nota bene.** In *Open Systems Today* (January 10, 1994) NEXSTEP was very favorably written up in two articles (the poster seemed almost surprised). Second article contained this interesting quote: "... keep in mind that COSE is a spec, Taligent's Pink and Microsoft's Cairo are vapor, but NextStep is a product."

by STEVE FRICKE

**SPECIAL  
INTRODUCTORY OFFER  
CALL FOR DETAILS!**

The only NEXSTEP™  
presentation package which  
combines a complete  
drawing kit with unique  
presentation aids and  
display modes to help  
you deliver an  
unforgettable multimedia  
presentation!

### Drawing Tools

- Text editing functions
- Drawing, transformation and transition tools
- Drag and drop color, sound and graphics (TIFF, EPS, RTF)
- Hot links, page caching
- Exclusive Speaker's Notes attachment

### Presentation Tools

- PostScript output for viewgraphs and slides
- Video output to a TV monitor to record on VCR
- Network presentation on work-stations around the office or around the world!

**@image • @\$399!**

The only affordable choice for high quality, multimedia presentations.

**RDR SOFTWARE GROUP**

Call 1-800-523-2874  
703-591-8713  
email: info@rdr.com

Circle 70 on reader service card

**NEW!  
lower prices on  
fax modem packages**

**1 fax modem.  
2 functions.  
4 cubes.  
No hassles!**



- NeXTWorld, Best of Breed '93

A single fax modem should handle data and faxes. But switching between them is a high-attention hassle.

Unless you're using NXFax.

NXFax is intelligent fax software that flawlessly handles both fax and data calls. It supports high-speed modems from ZyXEL,



- NeXTWorld, Winter '92

Telebit, Supra, and others. And it's sold by people who live and breathe NeXT - for clear insight, answers, service, and support.

It's the best way to get the most fax from NEXSTEP. And at any price, the most from your money. NXFax software \$135, modem packages with NXFax start at \$500.

802-496-8500

**BLACK & WHITE  
SOFTWARE**

Bridge Street Marketplace, Waitsfield, VT 05673-1210 • Fax: 802-496-5112 • nxfax@bandw.com

Circle 79 on reader service card



NEWS  
IN BRIEF

Elonex in January signed up to be NeXT's first European OEM. According to a report filed by the IDG News Service, Elonex will ship a new line of high-end Intel '486 and Pentium machines preloaded with NEXTSTEP 3.2. The line will feature a specially designed accelerated-graphics subsystem and improved I/O, the company said. Prices for a user system start at £2775 (\$4162), while developer systems start at £4575 (\$6862).

NeXT, in response to customer requests, has posted a fat-binary version of NewsGrazer on the Net. The software, originally developed by Jayson Adams when he worked at NeXT, offers users an easy yet powerful way to access the Usenet news groups. The application is not supported by NeXT. NewsGrazer can be found on the archive server cs.orst.edu under /pub/next/submissions/NewsGrazer75.tar.Z.

Metrosoft in February released an improved version of the API to its MetroTools 2.1 utility package, which allows users to create commercial-grade GUI utilities. The package also includes header files and full source code for a MetroTools module. Metrosoft: 619/488-9411, 619/488-3045 fax; info@metrosoft.com.

ITS in February released as shareware its ClassMaker NEXTSTEP-documentation generator. The software, which parses head files and writes out both .m and RTF documentation of classes, protocols, and categories, is designed to reduce the time it takes developers to format project docs. ClassMaker is available on cs.orst.edu and sonata.cc.purdue.edu. ITS: 312/474-7700; info@its.com.

Dancing Bear Enterprises is in motion, having moved its NeXT-equipment brokerage business to Vail, Colorado. The company has also become an authorized

[CONTINUED ON PAGE 15]

## Jobs scenario: 1 million seats by end of 1996

by DAN LAVIN

Describing "one possible scenario" for the outcome of the race among object-oriented operating systems,

NeXT CEO Steve Jobs claimed during his keynote speech at the East Coast Developer Conference that NEXTSTEP would reach an installed base of one million seats well ahead of Microsoft's Cairo - and that a third contender, Taligent, would be left in the dust.

The scenario assumes steadily growing sales for NEXTSTEP over the next three years. It also assumes that Microsoft and Taligent will not ship their competitive products

[SEE SALES, PAGE 15]

NEXTSTEP wins wire-to-wire			
Unit sales of object-oriented operating systems			
	NeXT	Taligent	Cairo
1993	75,000	0	0
1994	100,000	0	0
1995	300,000 <sup>1</sup>	25,000	250,000
1996	500,000 <sup>2</sup>	75,000	500,000
Total installed base after '96	975,000	100,000	750,000

Source: NeXT

<sup>1</sup>150,000 OpenStep  
<sup>2</sup>300,000 OpenStep

## Son of DBKit is born

by LEE SHERMAN

Redwood City - Bringing together custom objects, user-friendly front ends, and legacy database applications, NeXT will introduce Enterprise Objects Framework as the successor to DBKit at NeXT-WORLD Expo in June.

The current DBKit is limited to user-interface objects that display data in views. Developers can't easily add the custom objects used to model a particular enterprise.

"We saw that as a glaring shortcoming," said Van Simmons, president of VNP Software. "NeXT needed to find a way for developers to be able to take their custom objects and tie them to the world-

class NEXTSTEP UI objects."

The Enterprise Objects Framework consists of an open API that allows developers to plug in their own custom objects and swap out different layers in favor of third-party alternatives. It also addresses long-standing performance problems and bugs related to memory management, according to sources who have seen the product in its early stages.

"One of the problems with the existing kit is that the user-interface layer and the access layer are tied together in a proprietary way. There are limitations in how you can retrieve information from a database, process it, and then present it," said Dan Crimmins, assistant vice-president of First National Bank of Chicago.

Crimmins said he often needs to perform analysis on his data using custom objects before that data is displayed, something not possible with DBKit.

Customers who have already devised workarounds to the problems called the update long overdue. "The thing that NeXT brings to this is legitimacy," said Crimmins. "It sets a standard and direction so that a

[SEE DBKIT, PAGE 15]

## Color portables come into view

by DAN LAVIN

Washington, D.C. - Talus Computer created a stir at the East Coast Developer Conference in January by showing a NEXTSTEP portable running in color for the first time. NeXT is also working on its own solution to portable color, according to sources.

NEXTSTEP has always required a color portable to run. The environment, however, appears in black and white because portables generally

have eight-bit color, whereas NEXTSTEP requires 16-bit color. The Talus color driver simulates 16 bits of color using the eight bits available.

The company is negotiating with at least one NEXTSTEP OEM for use of the driver in a color system, according to Steve Sarich, president of Talus.

Sources at NeXT said the company is not interested in the Talus driver but is currently developing several approaches that will solve

the problem. "We looked at the Talus driver and found it to be too muddy, with unacceptable character resolution," said an engineer at NeXT.

NeXT is working on two solutions for inclusion in NEXTSTEP 3.3, accord-

[SEE PORTABLE, PAGE 15]

## Pages breaks WP mold

by LEE  
SHERMAN

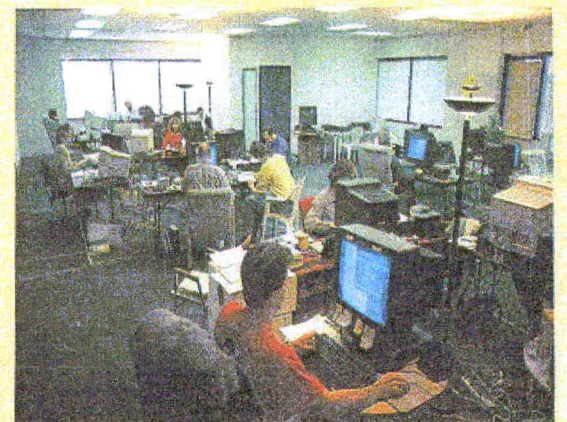
San Diego, CA - Word processing on NEXTSTEP may never be the same. At press time, Pages Software had entered the final testing phase for its unconventional document creation software and was promising shipment by March 1.

The software, three years in the making, takes a new approach to word processing that doesn't include such conventional tools as rulers, font panels, and style sheets. Pages is being positioned as an

easy-to-use word processor in light of NeXT's de-emphasis on publishing and a lack of available word-processing software for NEXTSTEP.

"The early view of the product was that it was more of a publishing product,"

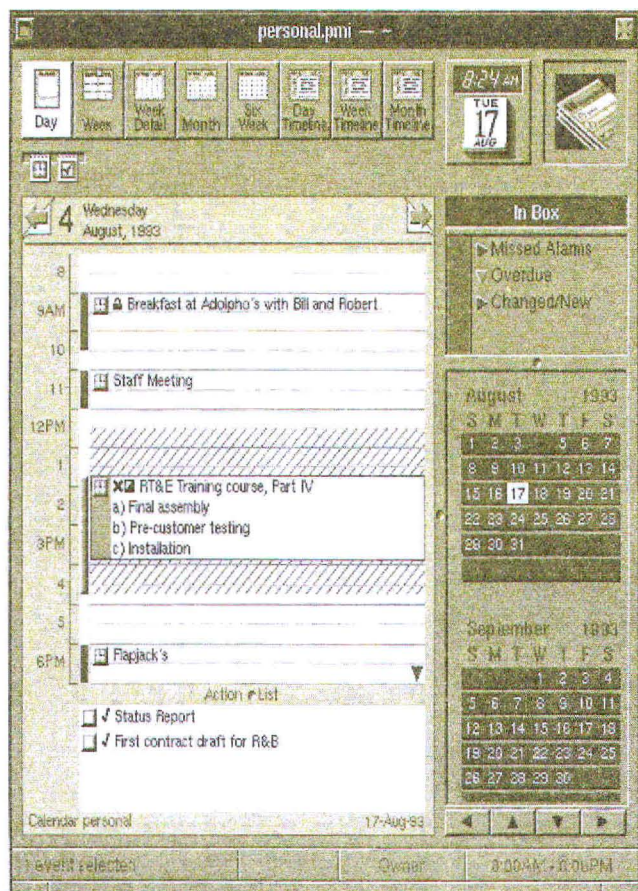
[SEE PAGES, PAGE 12]



In Pages boiler room, coders and testers sweat out final hours.



# Sarrus Introduces a Powerful Idea in Scheduling.



## Simplicity.

Other scheduling software promises you power — if you're willing to give up ease of use. We developed Pencil Me In™ because you told us you needed both.

### The ROI of Group Scheduling

Enterprises from small businesses to the Fortune 1000 are discovering that group scheduling gives them a tangible return on their investment. Why? Because people who work in groups spend a large part of each work day coordinating meetings, juggling action items, and hunting down conference rooms. Group scheduling software makes these tasks more efficient for individuals and for whole organizations.

### Power and Ease of Use

Pencil Me In is the leader in group scheduling on NEXTSTEP™ for a simple reason. It's the only product that gives you the power

of true enterprise scheduling with the simplicity of a paper time planner.

### API to Integrate Custom Apps

And now, with the Pencil Me In API, programmers can integrate Pencil Me In with mission-critical applications on their users' desktops. And that means, quite simply, greater leverage.

### Call Us for a Free Demo

Our customers love Pencil Me In. We think you will too. Call us at 1-800-995-1963 for a demo of Pencil Me In. And simplify everyone's life.

### Pencil Me In

Group Scheduling for NEXTSTEP.



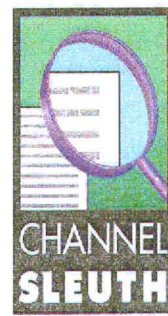
**Sarrus Software, Inc.**

565 Pilgrim Drive, Suite C  
Foster City, CA 94404  
(415) 345-8950  
info@sarrus.com

© Copyright 1993, Sarrus Software, Inc. All Rights Reserved. Pencil Me In is a trademark of Sarrus Software, Inc. NEXTSTEP is a trademark of NeXT Computer, Inc.

Circle 73 on reader service card

## Training trainers



In his travels, the Sleuth has seen a growing need for NEXTSTEP training. But he has also discovered that customers don't always know where to turn for help.

To find out what training might be available, the Sleuth turned first to NeXT for answers. NeXT offers a series of courses at all levels of NEXTSTEP expertise.

NeXT was more than happy to provide him with details about the company's own programs, including pricing, schedules, and course listings.

When asked for other options, only two other firms, Systemhouse and Pencom, were said to supply training comparable to the training provided by NeXT.

As is his wont, the Sleuth

probed further, but, after an exhaustive search through his database, the NeXT representative was unable to provide a list of certified partners.

With the limited amount of available trainers skilled in NEXTSTEP, NeXT needs help if it expects to populate the world with developers skilled in Objective-C and the AppKit. The program for certified training partners is a great way to get that help, but NeXT needs to make its technical-services staff more aware of it.

In the end, it matters less if NeXT supplies the trainers than if the training is readily and widely available.

NeXT Computer can be contacted at 415/366-0900, 800/879-6398.

*Each month, the Sleuth will look at a different aspect of NEXTSTEP distribution.*

## NEXTSTEP goes on the air with FeedBuilder/M

Quebec, Canada — Planon Telexpertise has released FeedBuilder/M, a NEXTSTEP application for controlling peripheral devices such as VCRs, videodisc players, and lighting equipment.

The software serves mission-critical needs in broadcasting, theatrical production, and the motion-picture industry by controlling real-time, sequential, manual, or triggered events. Because Feed-

Builder is implemented in software, broadcast facilities aren't locked into proprietary hardware.

FeedBuilder/M can be customized for individual sites. Prices start at around \$22,000 for both software and hardware.

Planon Telexpertise can be contacted at 1370 Joliot-Curie #708, Boucherville, Quebec, Canada J4B 7L9. 514/449-6481; stephane@planon.qc.ca.

### Pages

[FROM PAGE 11]

said Larry Spelhaug, CEO of Pages Software. "Internally, we always assumed that it would have full word-processing capability but that wasn't perceived outside the company."

Pages' extensive feature set, roughly equivalent to the latest versions of WordPerfect and Microsoft Word, was entirely implemented in object-based code. The software uses design templates to ease document creation.

Spelhaug attributed the long delay to having to write 90 percent of the software's objects from scratch. Now, though, "extensions to the product should go very quickly and support the notion of fast development using object systems," he said.

Pages is available on floppy disk or a special CD-ROM that includes a ten-minute self-running

demo of the program created with WatchMe screen-recording software from Otherwise (see "WatchMe cuts user-training costs").

The CD-ROM also includes additional templates and document examples not available on the floppy-disk version.

Pages sells for \$795 and comes with four design models: Victory, April, Writer, and Presents.

The company is offering a shipping special for \$595 that includes Pages bundled with one year of technical support, one additional design model, and a free upgrade to the next version of the program. If purchased individually, these items would total \$1065.

Educational pricing is set at \$195, direct from Pages. Developer pricing and site licenses are also available. Pages can be reached at 619/492-9050, 619/492-9124 fax; info@pages.com.



# Virtuoso 2.0 ropes in new feature set

by ELIOT BERGSON

Richardson, TX – Using the best technology to come out of Silicon Prairie, Altsys rounded up final beta testers in February for Virtuoso 2.0, its revamped design and publishing package.

"It has great potential," said Daniel Wasserman, a beta user at Light Printing, a New York-based service bureau. "It compares favorably with Adobe Illustrator 5.0."

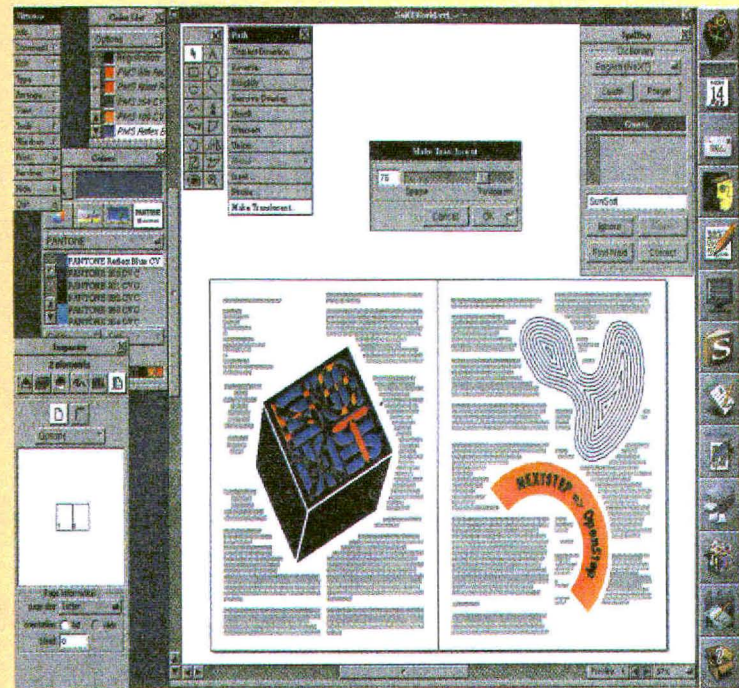
Along with innovative path features and a multipage capability that has long topped users' wish lists, Altsys enhanced Virtuoso's

crossplatform compatibility and gave it the power to write native EPS files that the software can parse and edit.

"Most of the new features came about from a cowboy attitude: 'I can do that,'" said Lorin Rivers, NEXTSTEP sales manager at Altsys.

The new version is set for an April release, with a suggested retail price of \$995. Users of Virtuoso 1.0 will be able to upgrade for \$149. Educational pricing of a CD-ROM version, with partial documentation, was being set at press time.

Altsys: 214/680-2060.



Virtuoso 2.0 will include multipage support and the ability to create and edit EPS files.

# Apps provide more options for NS telecommunications

by LEE SHERMAN

NEXTSTEP users have two new options for connecting to the outside world with the announcement of a pair of new telecommunications applications created exclusively for the NEXTSTEP environment.

TeleComm from Zion Software & Consulting provides a graphical front-end to terminal emulation, modem communications and file-transfer protocols. It allows file transfers using X-, Y-, and ZMODEM protocols, as well as VT100- and IBM PC-terminal emulation. The app also includes APIs for custom data handling.

TipTop Telecommunication from TipTop Software provides VT102, VT220, and ANSI terminal emulation, and allows multiple modem connections and shell sessions. Like TeleComm, the app

supports X-, Y-, and ZMODEM transfers, and has an API that can integrate external transfer protocols into TipTop.

In related news, Software Ventures announced that MicroPhone, once the lone telecommunications app under NEXTSTEP, has entered beta testing for a port to Intel. The company is also planning to follow NEXTSTEP onto SPARC and HP PA-RISC.

TeleComm costs \$92 and is available from Alembic Systems International at 303/799-6223; info@alembic.com.

TipTop can be purchased for \$185, and the company can be reached at 301/656-3837; tiptop%luka@umiacs.umd.edu.

MicroPhone sells for \$99, and can be upgraded to the Intel version for \$49 when that version is released. Software Ventures: 510/644-3232.

# WatchMe cuts user-training costs



by LEE SHERMAN

Bellingham, WA – With the shipment of WatchMe, screen-recording software for

NEXTSTEP from

Otherwise, seeing is truly believing. By capturing all activity and sounds from a user's screen, WatchMe allows customer-training sites, educators, and presentation professionals to create demonstration or instructional tapes that can be stored on disk for later playback. Tapes can also include voice annotation.

Editing features in the package

allow users to trim unwanted material, merge soundtracks from different recording sessions, add opening and closing screens, and combine tapes together into a single presentation.

According to Otherwise, the program can cut down on training costs by eliminating the need for training personnel. Tapes can

be stored on a server or sent by e-mail and accessed by users as required.

WatchMe is available in a multi-architecture version for \$110. Users of Intel computers will need a sound card and microphone to add voice annotations to WatchMe tapes.

Otherwise can be reached at 206/647-9435.



WatchMe brings screen-recording capability to NEXTSTEP.

# Emerald brings new facets to image editing

by PAUL CURTHOYS

Torrance, CA – A new image-processing app has been released, swelling the ranks of an already-crowded segment of the NEXTSTEP market. Emerald Image Tool from Gemstone Systems, however, sets its sights on users with demanding, high-end requirements for images that reach hundreds of megabytes in size.

"We aim more for a research environment, rather than desktop publishing," said Lyndon Hardy, president of Gemstone, "where people work with big images that have high depth and lots of bits per pixel."

The company's main clients have been government customers that work with satellite photography, as well as medical users involved with radiology and other detailed medical imaging processes, explained Hardy.

Emerald approaches the problem of manipulating large images by letting users modify a file, place it in the background, and continue working on other tasks while the app processes the alterations. Shipment of the app was delayed almost a year to solve this problem, Hardy said.

Emerald also provides standard image-editing features and supports a variety of image formats, including Landsat, raw, SPOT, and more common formats like TIFF.

Emerald Image Tool costs \$400 per user. Gemstone: 310/370-4557; info@gemstone.com.

# New image for RDR

by PAUL CURTHOYS

McLean, VA – NEXTSTEP users have a new option for developing presentation graphics with the shipment in March of RDR's @image 1.0.

"@image is a presentation package that is equivalent to and better than Concurrence," said Bob Ward, senior vice-president at RDR. "It has more functionality, and it's priced toward the end-user market – it's much more affordable."

In addition to its slide-show capability, @image also acts as a

drawing package, providing a full range of drawing and layout tools. Other key features include speaker notes that appear only on the presenter's slide and the ability to show presentations over a network.

"I was pretty impressed," said Jason Beaver, a beta user of @image and an engineer at Vanguard Software. "It was faster than Concurrence, and I liked the user interface."

@image runs \$399, and educational, government, and volume discounts are available. RDR can be contacted at 703/591-9517; info@rdr.com.

# StayInTouch 2.01 ships

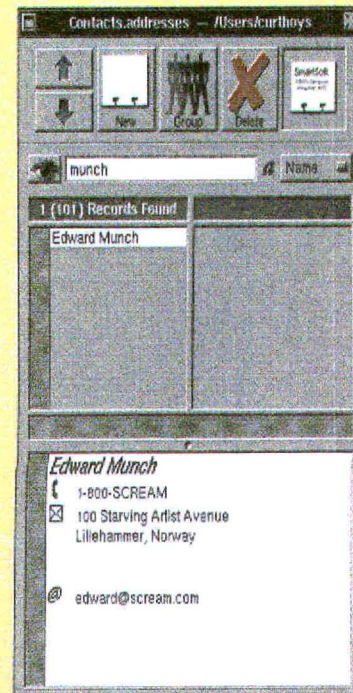
by PAUL CURTHOYS

Milwaukee, WI – Expanding its presence in the market for address-book software, SmartSoft in February announced the release of StayInTouch 2.01, an updated version with a variety of enhancements.

Among its other new features, StayInTouch now lets you drag in documents for automatic distribution to a group mailing list, print hard copies of address books, place bar codes on labels, perform compound searches, and include home phone numbers in your address book.

The new release also provides performance improvements and bug fixes, according to SmartSoft.

The list price for StayInTouch 2.01 is \$150 for each user license, with a student price of \$85. A fully licensable demonstration version is available on the archive



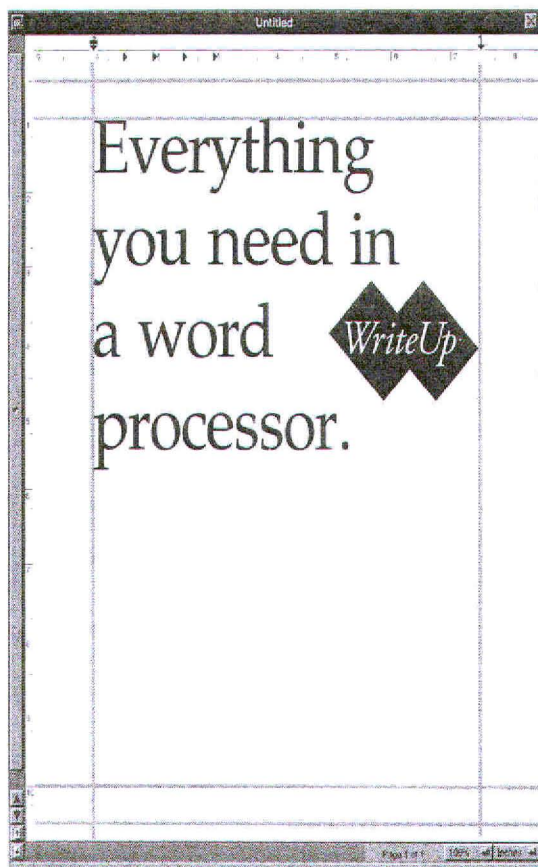
SmartSoft's updated version of its address-book software sports a raft of new features.

server cs.orst.edu.

SmartSoft can be reached at 414/964-8864; Info@SmartSoft.COM.



# Clean. Comfortable. Compatible.



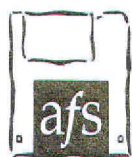
**Clean.** The first thing you'll notice about WriteUp is its elegant design. Start typing and you'll see that everything is exactly where you'd expect it to be—including headers and footers. That's because WriteUp is the first word processor designed for NEXTSTEP from the ground up by seasoned NEXTSTEP developers. You'll notice the difference right away, especially if you've been struggling with software that was really designed for other environments. And over time, you'll appreciate how WriteUp's clean design translates into trouble-free operation.

**Comfortable.** WriteUp is writer-friendly. Whether you're a confirmed NEXTSTEPer or a recent convert, you'll feel right at home with WriteUp's full set

of cursor and function keys, keyboardable text selection, and drag-and-drop color and graphics. WriteUp lets you focus on your thoughts, not the process of getting them down on paper.

**Compatible.** The world doesn't need yet another document format, so WriteUp doesn't lock you into one. Instead, WriteUp supports existing document standards as part of its normal operations. Throughout the year, we'll be releasing DIBs—filters that will allow you to read *and* write documents—for most major file formats, including WordPerfect and Microsoft Word.

**WriteUp.** Everything you need in a word processor. For under \$200. To order your copy, call 215-653-0911 today, or send Email to WriteUp@afs.com.



909 Sumneytown Pike • Suite 207 • Springhouse, PA 19477  
Phone: 215 653 0911 • FAX: 215 653 0711 • Email: Info@afs.com

© Copyright 1994, Anderson Financial Systems, Inc. All Rights Reserved. WriteUp, the WriteUp logo, PasteUp, the PasteUp logo, and the AFS logo are all trademarks of Anderson Financial Systems. NEXTSTEP is a registered trademark of NeXT Computer, Inc. Word Perfect is a registered trademark of WordPerfect Corporation. Microsoft is a registered trademark of Microsoft Corporation.

Circle 7 on reader service card

## BUSINESS NEWS

### First steps for OpenStep

by DAN LAVIN

Mountain View, CA – The effort to incorporate OpenStep into Solaris is well underway, according to Sun Microsystems.

"We are taking this project very seriously. Work is in progress, and NeXT and Sun engineers are in contact on a daily basis," said Jim Green, director of object products at SunSoft.

Sun received the promised NEXTSTEP source code some time ago, and there have been no surprises that would delay the project, according to Green. Sun will announce its product plans and timetables at the Solaris Developer Conference on April 5.

There is a staff in place at Sun working on OpenStep, and the company is adding to it every day, with several positions yet to be filled. The group is made up of external hires and voluntary transfers from other Sun groups, including a number of "major contributors among senior staff" from inside Sun, according to Green. The head engineers on the project report directly to Bud Tribble, SunSoft's vice-president for object products.

Right now, the work is being divided between Sun and NeXT engineers, but plans call for bringing key third parties and customers into the process once the announcement is made in April. ♦



### More support from among Big 6 firms

by DAN LAVIN

Toronto, Ontario – With the addition of Andersen Consulting, Canada, NeXT's Object Channel last month gained a piece of one of the world's largest technology consulting companies. The two firms said they will target companies that require mission-critical applications in the health-care, telecommunications, and financial-services industries.

In the deal, Andersen becomes an authorized integrator for NeXT and preferred supplier for NEXTSTEP in the Canadian market. NeXT will also join Andersen's Business Integration Partnership (BIP) program.

"Andersen Consulting is a leader in applying object technology. Our relationship with NeXT allows us to work closely with a creative technology provider to serve our Canadian clients," said Stephen Elliott, managing partner of technology integration services at Andersen.

A source with knowledge of the Canadian customer base said that Andersen adopted NEXTSTEP in response to demands for support from key customers in its practice.

The BIP program is a group of hardware and software relationships that Andersen describes as critical to delivering value-added business solutions. Besides NeXT, BIP includes Sun Microsystems,

Hewlett-Packard, Sybase, and Symbol Technologies.

Andersen Consulting, Canada, is the Canadian practice of Andersen Consulting, a worldwide management and consulting organization. ♦

### NeXT runs for border

Redwood City – Riding on the strength of several large sales south of the border, NeXT plans to open an office in Mexico City.

The country will be treated as a distinct-sales territory with its own country manager, according to Warren Weiss, NeXT's vice-president of North American sales and marketing.

"There are great opportunities here in Mexico. We have several customers already, and we are opening the office with a new big customer," Weiss said.

Sources identify the customer as PEMEX, the giant national energy company, which is planning to purchase several thousand NEXTSTEP units. NEXTSTEP is already localized for the Spanish language.

The staff of the new office has yet to be named. The country manager will report to Weiss. ♦



**BRIEFS**  
Continued

reseller of Quix Computerware's Daydream hardware add-on. Daydream enables NeXTstations to run Macintosh System 7.1 and application software. Dancing Bear: 303/479-9101; tim@dancingbear.com.

IFE Technologies has released Magellan 2.0, an app that provides real-time industrial-process control. The package, which is designed to control material processes involving temperature, pressure, digital controls, and safety interlocks, can be used in semiconductor, thin-film, and ceramic production or research, according to the company. Magellan costs \$9990 for a single-user license. A development kit can be purchased for \$4990, and educational pricing is available. IFE: 33/1/47.08.92.50; jj@ife.fdn.org.

WhiteLight Systems has leveraged the object-oriented design expertise it gained from working on its WhiteLight Engineer enterprise-modeling software into the pivotal games market, releasing Mission Critical Solitaire 1.0. The company claims that the software will be a compelling alternative for Windows users because "Solitaire is the app most used on Windows." The fat-binary game sells for \$35. WhiteLight: 415/321-2183, 415/321-2083 fax; info@white-light.com.

Leading Market Technologies in January released TickBase, a UNIX server for rapid storage and retrieval of time-critical transaction data. The package, which was primarily developed under NEXTSTEP, is targeted at users of real-time financial data from sources such as Reuters, Telerate, and Knight-Ridder. It is available on a variety of UNIX platforms and sells for between \$500 and \$2000 per seat, depending on volume and platform. Leading Market: 617/494-4747.

Alembic Systems International announced in January that it has launched a hardware-leasing program that offers several different Intel systems for NEXTSTEP users. The company leases two basic systems, a 66MHz '486 and a 60MHz Pentium, that come preloaded with NEXTSTEP and have a variety of configuration options for RAM, hard-disk size, and system design. Alembic: 303/799-6223, 800/452-7608, 303/799-1709 fax; info@alembic.com.

**Sales**

[FROM PAGE 11]

until mid-1995. By this reckoning, NEXTSTEP reaches one million seats by the end of 1996, while Microsoft finishes that year with an installed base of 750,000, and Taligent staggers in at just 100,000 seats (see chart).

"We are the leader in object-oriented solutions," said Warren Weiss, NeXT's vice-president of sales and marketing. "We firmly believe that these numbers are realistic. Our partnerships will make the volume happen."

"The NeXT numbers are good, aggressive, achievable targets,"

agreed an informed source who closely follows the market for object-oriented operating systems. "But the Taligent and Microsoft numbers significantly understate the marketing strength of these companies."

Microsoft and IBM have long-term relationships with a large number of important corporate accounts, which makes some number of large wins probable, regardless of the technical merits. And regardless of how late their products ship, these competitors are likely to attract third-party developers in numbers that are disproportion-

ate to the size of their installed base.

"Look, IBM itself will be a 100,000-unit site for Taligent right off the bat," the source said.

Among the one million NEXTSTEP seats in the Jobs scenario are 450,000 attributed to OpenStep, the object-oriented component of SunSoft Solaris that is expected to begin shipping in 1995. While it is expected that all future Solaris buyers will receive OpenStep as part of the software, many won't actually use it. Therefore, the number of users who install OpenStep may shrink the actual installed base. ♦

**PDO**

[FROM PAGE 11]

the same configuration, and PDO allows them to run NEXTSTEP on clients and Solaris on servers."

Expanding its support for NeXT's technology, Data General at press time was shooting for a March release of a version of PDO 1.0 that would bring its DG-UX into the NEXTSTEP fold.

"The performance is very good," said Christine Wallis, director of marketing at Data General. "We have a number of customers who are very interested because, as groovy as [NEXTSTEP's] desktop tools are, they frequently need more horsepower."

A 2.0 version of PDO for DG-UX should follow quickly now that NeXT has completed its upgraded version, Wallis added.

Negotiations for ports to AT&T Global and Digital Equipment are underway, according to Kate Smith, NeXT's PDO product manager. Finished products would appear approximately six months after an agreement is signed. "We're actively talking to people," Smith said. "We're interested in getting PDO on a lot of platforms."

Smith added that pricing for PDO will remain equivalent across each new platform to which the software is ported. ♦

**DBKit**

[FROM PAGE 11]

third-party supplier might be able to supply a solution to multiple customers without having to customize it for each one. This is the sort of framework that is required

for vertical-market applications to build on."

Developers weary of the ever-changing shifts in strategy coming from NeXT are encouraged by the company's increasingly focused

approach. "Enterprise Objects are a very natural outgrowth of mission-critical custom apps," said Simmons. "It manifests a realization of what mission-critical custom apps really imply." ♦

**Portable**

[FROM PAGE 11]

ing to the source. One is an eight-bit color version of NEXTSTEP that will open up the operating system to a much wider range of platforms. A large segment of the SPARC workstation line is based on eight-bit color, and this solution is required to complete NeXT's

port to these machines. "Eight-bit will also open up a large universe of lower-cost Super VGA-equipped Intel machines to NEXTSTEP," said the source.

The second solution will be drivers for the newest true 16-bit color portables, which are due out later this year. This approach will

be relatively simple, according to NeXT, once the machines are available - but they are expected to be expensive at first.

NeXT expects to demonstrate its color-portable options at NeXT-WORLD Expo in June and make them available in NEXTSTEP 3.3 later this year. ♦

# Technology key in world of spy versus spy

**L**t. Sullivan was as shocked as anyone by the Rick Ames fiasco. It's as if Microsoft had a mole inside the NeXT labs - there's no way of knowing what's been compromised. On the other hand, it's not a surprise that Ames was brought down by a poor grasp of technology. The man had access to the best computer technology in the world, yet the incriminating evidence was found on a used ribbon from a dot-matrix printer in his trash. If we're worried about trade craft, you have to assume the Russians are already on to dot-matrix printing.

Besides chalk marks on mailboxes, there was plenty of other news out of northwest Washington, D.C., the location of January's East Coast Developer Conference. Tensions in the Intel hardware market flared into the open between the established OEMs and the noncertified box movers. One of the latter, eCesys, came to the show with low-level NeXT approval to display a custom-configured workstation. But when NeXT Director of Strategic Partnerships Paul Vais spotted the eCesys machine, he demanded it be torn down on the spot. Later, Vais took his turn on the conference program to tell customers that they should avoid the "little guys."

Tempers were also in evidence over the eight-bit color driver that Talus proudly demonstrated on a no-name notebook. NeXT considers the driver to be inferior technology, but at least one of the strategic OEMs, NEC, is interested enough that it may offer it on Versa notebooks. Sullivan is uncertain how much of the annoyance being expressed in the NeXT corner is the result of long-running tension between the company and Talus and how much is a legitimate technology difference. Certainly, the Talus dithered color is less than perfect, but it appears to be serviceable for Sullivan's purposes.

**N**egotiations went down to the wire over announcements of third-party ports. Digital Equipment Corporation was not happy that NeXT chose not to announce a DEC-supported Alpha port of NEXTSTEP. DEC had intended to push its DEXpcXL product heavily because it lets you use a Pentium or '486 now and upgrade to an Alpha chip when the port is released. At least one witness has seen NeXT Mach running (albeit in single-user mode) on an Alpha in Redwood City.

On the other hand, NeXT did include DEC's UNIX among its list of upcoming ports for Portable Distributed Objects. DEC representatives at the event later told Sullivan that the PDO deal had not been inked. Similarly, the long-expected NCR endorsement for PDO failed to materialize.

In case you were wondering, Ron Weissman is fine. Concentrating on his presentation in the bright glare of the stage lighting, he accidentally stepped off the platform. He got right back up and gamely went on but was noticeably limping later at the conference. One rumor mentioned a hairline fracture, but when I next saw Ron, he was just fine.

NeXT third-party developers are griping again. In his keynote presentation, Steve Jobs focused exclusively on custom apps and failed to highlight any current third-party software in his familiar NeXTMail-based demonstration. In fact, just about the only high-level mention of third-party developers came during Scott McNealy's NEXTIME-delivered remarks, which were addressed directly to commercial developers.

## Lt. Sullivan



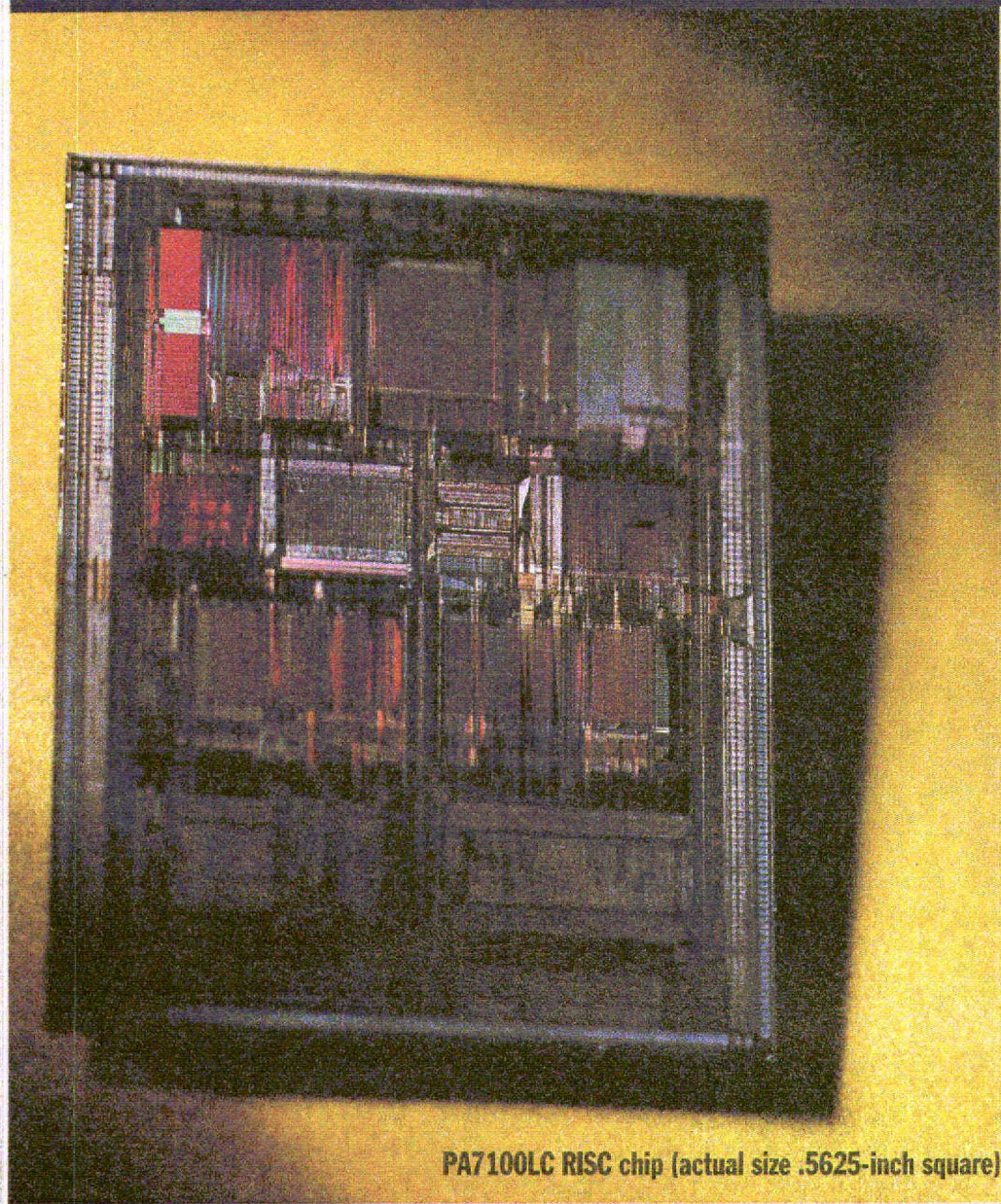
**M**ore than one developer who attended last November's executive briefing reminded Sullivan that NeXT has not yet delivered on its promised customer list. Most concede that the list need not contain the most sensitive contacts, but NeXT's resistance to coming up with references at its known customer sites is widely viewed as unnecessarily obstructionist. Meanwhile, the recent management change in NeXT's developer-relations program has brought a strategic shift as well. The department is apparently focusing on recruitment of major crossplatform developers to OpenStep. Sound familiar?

Among third-party developments, the big surprise of the month was the defection of longtime NeXT supporter Marc Munford from Insignia to Pages. Sullivan was also pleasantly surprised by all the interesting new stuff underway at Metrosoft, especially its MetroLock licensing technology, which can enable any kind of licensing scheme a developer chooses to implement, including locking down to the object level. This package could be one of the advances that will finally enable a true ObjectWare market.

*It sometimes gets confusing in this hall of mirrors known as the counterintelligence game. Exchanging information is a good thing, as long as you remember where your loyalties lie. Nothing is better for keeping your compass setting than a white Lt. Sullivan mug in your home or office. Get yours for a tidbit of inside information. Reach Sullivan's voice mail at 415/978-3374 or e-mail him at sullivan@nextworld.com. RSA public key available upon request.*



# First NeXT RISC Wo



PA7100LC RISC chip (actual size .5625-inch square)

**N**eXT has been chasing a chimera called the NeXT RISC workstation since almost the beginning of the company's existence. Few saw the legendary beast, but its reputation spread far and wide throughout the NeXT community. Hewlett-Packard's new low-cost workstation comes the closest yet to capturing that machine's mythical appeal.

The arrival of NEXTSTEP for HP PA-RISC provides NeXT customers with new high-performance hardware choices that, for the first time, allow them to deploy NEXTSTEP throughout the entire enterprise. And the portable nature of NEXTSTEP once again gives developers access to a new market with a minimum of effort.

"The PA-RISC architecture has a tremendous amount of credibility in the financial-services community, as well as the broader UNIX community," says Jonathan Schwartz, president of Lighthouse Design. "This is one of the first unadulterated pieces of good news

for NeXT since they decided to get out of the hardware business."

## In the beginning

NeXT first looked at RISC (Reduced Instruction Set Computing) technology in the early eighties when it planned the original Cube. But RISC was not yet mature, and instead the company went with the latest in CISC (Complex Instruction Set Computing) technology, the Motorola 68030. With the design for the NeXT RISC workstation on the drawing boards, NeXT found itself in the middle of an industry price war that was won by Intel, another CISC architecture. Porting to Intel and closing down hardware operations were survivalist tactics, not long-term strategies. The RISC workstation died a premature death, a victim of the price war.

CISC processors like the Pentium are reaching the end of their life span; they support complex instructions that can take several

clock cycles to complete, while RISC processors use simplified instructions that can be executed in only one or two clock cycles. With the port to PA-RISC to be followed by versions of NEXTSTEP for SPARC and possibly Digital Equipment Corporation's Alpha, NeXT is staking its future on RISC.

NeXTWORLD got a sneak preview of NEXTSTEP for HP PA-RISC running on the new Model 712, and we were impressed with how well the NEXTSTEP experience translates to a radically different architecture. Put simply, it's is where NEXTSTEP belonged all along (see "Eight Bit Wonder").

HP's Precision Architecture RISC processor was first introduced in 1986 and, over time, has become the industry leader in both performance and price/performance over competitors such as Sun Microsystems's SPARC and Silicon Graphics's MIPS. Like NEXTSTEP, it is a proven technology that is just beginning to move up the price/performance ramp. HP has committed to PA-RISC for the next decade, with plans to use the microprocessor in everything from personal digital assistants to high-end servers.

NEXTSTEP for HP PA-RISC will run on the HP Apollo 9000 Model 712, 715, 725, 735, and 755 but was specifically designed with the 712 in mind. NeXT has been shipping PDO (Portable Distributed Objects) for the Series 800 Business Servers since November 1993.

With the introduction of the Model 712, HP is helping NeXT remove the hardware barrier around choosing NEXTSTEP. There is now a wide range of available options at nearly every price point and performance level.

Although the Model 712 is initially targeted at the financial-services market, its capabilities suggest that it will also have appeal in multimedia and publishing, markets that were once promising but have long remained closed to

NeXT. It could even reawaken interest in NeXT in academic circles—NeXT's original target market.

Customers in financial services typically require higher performance and a level of integration not possible with a PC. "We're pushing toward on-line, global, real-time systems, and there are limitations to what a PC architecture is going to be able to do," says Jim Holworst, senior vice-president of trading products at First National Bank of Chicago. Accord-

## Our first look on HP's low-

by Lee

ing to Holworst, the new software is arriving just in time, as his firm looks for a replacement for its aging black hardware. "NEXTSTEP for HP PA-RISC gives them everything they need," says Jonathan Guerster, financial services marketing manager of HP's workstation group, "access to the enterprise, high performance, and rapid application development and deployment."

NEXTSTEP for HP PA-RISC is the missing piece in the strategy outlined by NeXT and HP when the two companies joined forces last May. NeXT software now runs on the complete range of HP hardware—Intel-based Vectra PCs, 700 series workstations, and Series 800 servers. "End users can decide what level of performance they need," says Guerster.

HP has been striving for years to put a human face on UNIX. With NEXTSTEP running on a low-cost workstation, the company finally has the opportunity to move into the commercial space that, until now, has eluded it. "The financial-services market was a clear win, so we did that first," says Eric Chu, NeXT's product marketing manager. "But NEXTSTEP opens up a lot of doors to the HP sales force."

PHOTOGRAPH BY DAVID MAGNUSSON



# NeXTstation

Chu divides the potential markets into two groups. The first, of course, is financial services, the group targeted with the Object•Enterprise initiative. The second encompasses all other vertical markets, including health care and telecommunications.

According to Chu, pricing will continue to remain the same across all NEXTSTEP ports (which is not necessarily true of OpenStep implementations like Solaris, since

compatibility will remain a nagging concern. Many will continue to stick with HP-UX 9.0 running Motif 1.2 X11 Release 5. HP-UX will run Windows applications under WABI or SoftWindows, but there is currently no way to run these applications under NEXTSTEP. Customers who need advanced networking capabilities and multitasking might decide to wait for the impending port of Windows NT to PA-RISC. But for existing NEXTSTEP users who have never quite shaken the workstation mentality, the partnership is a dream come true.

## Any port in a storm

NeXT first proved its porting expertise with the Intel port in May 1993, as it was beginning its transition into a software company. The NEXTSTEP for HP PA-RISC project officially began on July 1, 1993, taking a team of 20 engineers approximately one year to complete. The software will ship sometime this summer, according to Avie Tevanian, NeXT's director of RISC, and subsequent ports are likely to take the same amount of time, with NEXTSTEP for SPARC arriving at the end of 1994. "It's a similar recipe, we just need to change the processor," says Tevanian.

## NEXTSTEP t pizza box

man

their price is set by the software vendor, not NeXT).

The extent of HP's commitment to the new platform remains in question. NEXTSTEP for HP PA-RISC is just one option being offered to HP customers, and current marketing efforts are focused in just one narrow segment. HP will support Taligent objects within HP-UX, providing some of the benefits of NEXTSTEP. For some, the lack of Windows com-

## EIGHT BIT WONDER

♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦

The first thing you notice about the Model 712 is how easy it is to set up. There are no cards to install and nothing to configure. It's a real workstation with integrated networking, sound, and graphics capabilities that work the minute you take it out of the box. A single power button on the front of the machine is used for both powering on and shutting down the system.

To test Hewlett-Packard's speed claims, we launched the Mandelbrot demo that ships with NEXTSTEP. As soon as we let up on the Run button, the image finished drawing. Graphics are sharp and flicker free. At first glance, the Model 712 appears to be running NEXTSTEP in 24-bit color at a resolution of 1280-by-1024 pixels. But in fact, it uses an HP technology called Color Recovery that uses a lossy algorithm to display 24-bit color in 8 bits. This feature allows the 712 to display true-color images using one-third of the VRAM, keeping the overall cost of the system low.

Designers and others who must have true color can purchase a higher-end machine (such as the 715) with a 24-bit color card, but such systems cost considerably more. We tried out a 715 and were impressed to discover that dragging windows around on the screen seemed much faster than on a monochrome NeXTstation.

Support for the 712's sound hardware hadn't been enabled in the prerelease version of NEXTSTEP for HP PA-RISC that we saw, but a driver should be ready by the time of release.

The 712's video capabilities, however, are another matter. Many users are looking to the 712 as a possible replacement for the NeXTdimension system, but until NeXT releases its NEXTIME video technology, NEXTSTEP can't take advantage of the 712's built-in MPEG decompression. Even then, support is far from certain. NeXT could develop a plug-in for NEXTIME that supports the video hardware, but, at press time, NeXT had no current plans to do so. Under HP-UX, the 712 can play back real-time video at 30 fps in a window that is 320-by-240 pixels in size. Surprisingly, the machine lacks any kind of video I/O.

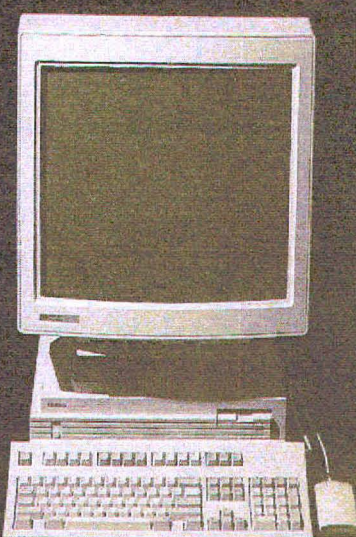
NEXTSTEP for Intel includes a dual boot capability that allows you to keep both DOS/Windows and NEXTSTEP on a single hard disk. NeXT may enable this capability under NEXTSTEP for HP PA-RISC, but given the size of both HP-UX and NEXTSTEP, users may prefer to keep each OS on a separate drive.

The 712 can support multiple monitors simultaneously, but since this capability is missing from NEXTSTEP 3.2, the version on which NEXTSTEP for HP PA-RISC is based, it is unlikely to be supported in the initial release. NeXT also has no plans to support HP's TeleShare, an expansion card that offers integrated telephony capabilities. A driver could be written using DriverKit by an enterprising third party. ♦

by LEE SHERMAN

## MODEL 712 AT A GLANCE

- PA7100LC RISC Processor
- 16-bit CD-quality stereo audio
- Real-time video
- Built-in networking
- New Color Recovery technology
- Priced from \$3995





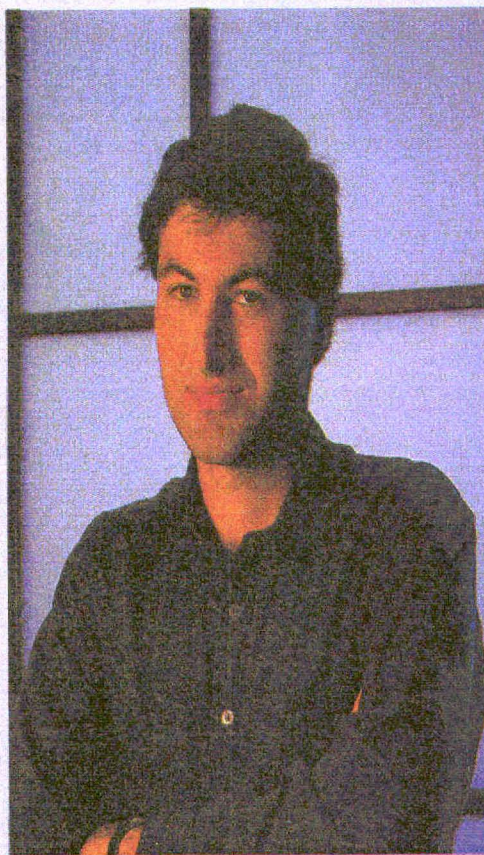
Even before the decision to drop its hardware was made, NeXT had been flirting with putting its OS on other architectures. Much of the initial work that resulted in the HP port was done when NeXT was considering which CPU to use for the fabled NeXT RISC workstation. "When we started, we had a lot of experience, not only with Intel but also with the 88000 architecture and the PowerPC," says Tevanian. "We found that we had already done a lot of the work."

To facilitate the project's completion, Hewlett-Packard engineers worked on-site at NeXT, handling low-level issues related to their hardware, such as device drivers, while NeXT engineers concentrated on higher-level issues relating to NEXTSTEP. With the return to more proprietary hardware, future ports, like the upcoming version of NEXTSTEP for SPARC, will continue to be driven by such partnerships. "When we do these types of projects, we need a partner to help us," says Tevanian. "We're not going to just go out and get a machine and figure out how it works."

The port proved easier than the port to Intel because the target platform, the 712 workstation, has a relatively finite set of hardware requirements. "The nice thing is that there aren't a lot of different Ethernet and SCSI cards or lots of different ways to display on the screen, so we don't have to replicate our work," explains Tevanian. "We could do just one set of drivers."

For both users and developers, NEXTSTEP for HP PA-RISC is virtually identical to the versions for Motorola and Intel. Beyond increased performance, you won't see any major changes in the NEXTSTEP environment. "We're interested in delivering the NEXTSTEP experience to as many people as possible," says Chu.

In a heterogeneous world, NeXT will live or die by how well it lives up to that strategy. On the Intel platform, the task was made harder by the many possible configurations and the need to integrate Windows into the NEXTSTEP environment. NEXTSTEP for HP PA-RISC is a no-compromise version of NEXTSTEP, with all of the elegance intact.



## "It's a simple recipe, we just need to change the processor."

— Avie Tevanian

### The new math

Initially, the software available for PA-RISC will be a subset of what is available for Motorola and Intel. It can't be assumed that developers will follow wherever NeXT leads, but because NeXT has laid the groundwork, porting an application to any new platform requires little more than a recompile, with no changes to the source code. "You recompile, double-click it, and it works," says Tevanian.

With the Intel port, NeXT claimed that it could be accomplished in a matter of days. On PA-RISC, Tevanian says the port can take as little as one hour. You can expect to see mainstream NEXTSTEP applications, like Anderson Financial Systems' WriteUp; Athena Design's Mesa; Lighthouse Design's Concurrency, Diagram!, and Taskmaster; and Sarrus Software's SBook and Pencil Me In, available for PA-RISC on or near the time of release.

While Tevanian's claims may be exaggerated and don't take into account software testing, documentation, or other aspects of producing commercial software, the number of potential new seats seems to outweigh the costs associated with porting, especially for those developers already in the

NEXTSTEP market. "I think those vendors that are still viable will port," says Lighthouse Design's Schwartz. "Some of the smaller utilities might not happen simply because those companies may not get access to a PA-RISC machine."

Costs are low enough that developers can enter new markets without having to leave another one. The number of seats they can sell into can double or triple overnight.

"We took development and packaging out of the equation," explains Chu. "The only thing left for a developer to do is QA, and they've got a product. We've really lowered the barrier on entering many new markets."

The message to developers is that NEXTSTEP is not just one architecture but several, all of which interoperate across a network. NeXT is telling software vendors to develop their applications on Intel now and port to other architectures as they become available. But PA-RISC may eventually become the development platform of choice because it can significantly decrease compiling time.

### Leapin' lizards

Regardless of the lack of applications, users who need the ultimate in NEXTSTEP performance will turn to the Model 712 in droves.

When it comes to naming its computers, HP is all business. The "Model 712" may not sound sexy, but the machine itself is. (Perhaps HP should have stuck with the more appropriate code name, Gecko.) Powered by the latest PA-RISC chip, the screaming PA-7100LC, which runs at up to 80MHz and features amenities like built-in CD-quality audio and full-motion video capabilities, this machine could be the workstation for which longtime NEXTSTEP users have been waiting.

The Model 712/60, which runs at 60MHz, is rated by HP at 58 SPECint, while the 712/80i is rated at 84 SPECint. Both systems deliver 79 SPECfp, making them the fastest NEXTSTEP machines available. By contrast, a NeXTstation Color is rated at around 12 SPECint and 10 SPECfp.

NEXTSTEP for HP PA-RISC was clearly designed with the Model 712 in mind. The 712's integrated hardware capabilities and sleek look calls to mind NeXT's original black hardware. At the same time, it returns NeXT to a level of price/performance that it hasn't experienced since the introduction of the NeXTstation.

Like Silicon Graphic's Indy platform, the Model 712 running NEXTSTEP provides all of the benefits of running a high-end UNIX operating system with an easy-to-use interface and powerful underlying hardware. It also includes multimedia capabilities at a price point low enough to compete with high-end PCs. This point is reinforced by a PC-style keyboard and mouse. "We talked to a lot of customers, and we heard loud and clear that they wanted more hardware choices," says Chu.

The Model 712, despite its conservative name, is a fire-breathing monster that eats CPU cycles for breakfast. Together, NeXT and HP have done what neither company could do alone. ♦

LEE SHERMAN is a senior contributing editor to NeXT-WORLD.



# NeXT is cracking open the Japanese market with native character support and – surprise – software availability

NEXT TIME YOU FIND YOURSELF AT TOKYO'S INTERNATIONAL AIRPORT, JUST HOP on the Narita Express for central Tokyo. Transfer once for Shinagawa station and once more for Shin-Kawasaki, a small community on the outskirts of Tokyo.

Walk up the stairs of the subway station, past the bank of vending machines selling cans of Coke, Pocari Sweat, hot chocolate, and beer. Leave the station, turn around, and you'll see the twin glass towers of the Mitsui Building about a half kilometer in the distance.

"You can't miss them," says James Higa to visitors from the West. "They're the only towers around."

Indeed they are. The rising sun glints off the glass of Higa's 16th-floor office, midway up the tower on the right. NeXT Computer K.K. – NeXT's home across the Pacific.

## West meets East

Like Gaul, NeXT is divided into three parts: United States, Europe, and Asia. "I run Asia," says Higa.

At first glance, Higa appears like any other soft-spoken, modestly dressed Japanese businessman – until he speaks. In a land where English is a rarity, Higa speaks in a clear voice without the slightest trace of an accent. But lest you think he is an American with a Japanese heritage and last name, listen to him speak with his staff. Then Higa is the soft-spoken, cautious *nihonjen*, without a trace of Western articulation or manners. It's that seamless transition between English and Japanese, between East and West, that remains at the heart of NeXT's strategy to capture a piece of the Japanese market.

Times have changed since NeXT's single claim to fame in the Japanese market was its easy system for entering and reading Japanese Kanji characters. Nevertheless, NEXTSTEP's technical edge remains a strong selling point.

Until recently, Japan had an uneasy relation with computers. The problem was character sets. In addition to the Roman characters of the West, the Japanese use three other character sets on a day-to-day basis. There is the Hiragana, a phonetic alphabet with 83 different characters; and the Katakana, another phonetic alphabet with 86 characters that is used for words borrowed from other languages. Together, they comprise the Kana.

Then there is the Kanji, a Chinese pictorial character set brought to Japan by the Chinese more than 1200 years ago. Although the typical student recognizes 3000 Kanji symbols upon graduation, there are really many, many more symbols, frequently used for place names or kinds of foods.

When typewriters, and then computers, came to Japan, many people predicted the end of the Kanji. After all, typing on a keyboard with a thousand keys was more than unworkable; it was slower than handwriting. Some

people predicted that the Japanese would have to stop using their pictorial system and only use the phonetic Kana.

In recent years, however, computers have invigorated the use of the Kanji, mainly because of good phonetic dictionaries and sophisticated artificial intelligence-based systems that can pick an appropriate Kanji character from a phonetic spelling in the Hiragana or Katakana. Users type on a Western QWERTY keyboard (with the space bar split into a few extra Shift keys). The operator types the Kana for a word, a phrase, or even an entire sentence, and then presses a special key to cycle through the various Kanji symbols that have a similar sound. When the right Kanji symbol is found, another key substitutes it for the Kana text.

## Opening the market

When the first Japanese version of NEXTSTEP was introduced for the Japanese market, NeXT's software was the only operating system from the West to automatically support phonetic entry of the Kanji character set in every application. Other operating systems, such as DOS or vanilla

UNIX, required developers to write their own Kana-to-Kanji system for each program. At the same time, NeXT's 400-dpi laser printer was the only low-cost laser printer on the market with enough resolution to print the complex Kanji forms that make up the basis of written Japanese. NeXT was the obvious, right choice for Japanese who were interested in computing.

At the time, NeXT's major competition didn't come from other UNIX workstations but from Apple's Japanese version of the Macintosh operating system, which had its own host of problems; and NEC's bastardized version of Microsoft DOS, which, for protectionist reasons, wouldn't run standard DOS or Windows applications. It also wouldn't run on any IBM-compatible PC that wasn't equipped with special ROMs.

These days, things have changed. For starters, NEC's homegrown Japanese DOS is largely a thing of the past. Instead, most Japanese use IBM DOS J/V and Microsoft

Windows-J, with standard shrinkwrapped DOS and Windows applications from the United States, on standard IBM-compatible PCs (though not necessarily with Japanese-language support). Windows-J comes with a Japanese-input program called IME and two TrueType Japanese fonts, giving many Japanese computer users the power they want at a price they can afford. Similar advances have been made in the Macintosh universe, where most of the problems with KanjiTalk have been worked out.

Meanwhile, Sun's SPARCstations have come to dominate in Japan's technical-workstation market. Most engineers with Suns on their desks use a special version of GNU EMACS (called NEMACS) running on top of an internationalized version of X Windows that allows them to enter phonetic spellings of the Kanji in a special buffer, cycle through a variety of Kanji choices, and send the result to the X Window program of their choice.

NEXTSTEP is still the only operating environment that gives every application program in-line Kanji conversion. NEXTSTEP is also the only multilingual system that allows different users on the same machine to enter the text and see their menus in English, Japanese, French, German, Spanish, and so on. Unfortunately, the market has dictated that standardized, low-cost hardware and applications are more important goals.

# Open Door Policy

BY SIMSON L. GARFINKEL



## Japanese Software for NEXTSTEP

PROGRAM	DESCRIPTION
<b>Educational</b>	
easy (Education Assistance System)	Tracks grades
Look Up!	On-line documentation
(Majan)	Networked Majan game
Speech Editor	Edits speech
UNIX for NeXT	UNIX tutorial
<b>Graphics</b>	
Appsoft Image	Pixel manipulation
BJ	Canon BubbleJet driver
CAD-Engine for NeXT	CAD program
Canopat	CAD program
Diagram! 2.1J	Drawing
GT-Star	Graphics editor
IX	Image-processing system
LASER SHOT	Canon LASER SHOT driver
LATLAS	Incorporates map data
LightShow 1.2J	Presentation and outlining
Prims	Scanner driver
NEXTSTEP Utilities for PIXEL Jet	Canon PixelJet driver
Quick Scan	Scanner driver
RE: REGARDING	Document-management system
Scan8000	Scanner driver
SV-Library	Still-frame video driver
<b>Medical</b>	
IMAGE POCKET	Ultrasound image processing
LX100	Analyzes medical tests
Pro-MEDdiag 3.0	Analyzes medical tests
<b>Multimedia</b>	
CDWriter - NeXT/S	Writes CDs
NXtalk2	Speaks English and Japanese
RM	MIDI sequencer
Spiel	Speaks in Japanese
Super Authoring System (including SA Std., SA Color, SA Pro, and SA Runtime)	Multimedia authoring system
Tiles Work	Dock extender
<b>Native</b>	
Banquet Vision	Banquet planner
Bridal Vision Guide	Wedding planner
NIP	ISDN connectivity
Textile Designer	Textile-design program
<b>Productivity</b>	
DataLink for SYBASE	Link to Sybase
FaxLink	Fax-modem driver
First Report	SQL report writer
GFbase 3.1	Graphical DB front end
GFbase Kit	SQL database
(Intro)	Puts NeXT input in Fortran and Pascal
INFORMIX 4.1	SQL database
INFORMIX DBKit Adaptor	DBKit adapter
Lotus Improv 1.0J	Spreadsheet
LPI COBOL	ANSI Cobol X3.23-1985
METACard for Windows	Forms-based database system
NeXT Easy Graphic	Puts graphics in C, Fortran, and Pascal programs
Optima NX	Financial modeling
SQ-1	Mathematical-graphing program
Templated Field Kit	Smart fields
WingZ 1.2J	Spreadsheet
X-Final	Character-based spreadsheet
3270Vision	3270 terminal emulator
<b>Word processing</b>	
Documentalist 1.0	Word processor
PRESBOX for NeXT	Page layout
VJE-Pen Super 2.0	DTP/Page layout
VTEXT	Word processor

To discover NeXT's new marketing strategy in Japan, you'll need to leave NeXT's headquarters and take a walk to the streets, where NeXT's partner, Canon, is selling NEXTSTEP for Intel in its chain of Zero-One shops throughout Tokyo and Japan's industrialized corridor.

## Sales boom

According to Shigeru Kobayashi, who manages NeXT sales for the Zero-One shop in Tokyo's Shibuya district, sales started picking up when NeXT introduced NEXTSTEP 3.2 in the United States (the Japanese language version wasn't available until early 1994). In the last four months of 1993, says Kobayashi, the Zero-One store sold more than 50 NEXTSTEP for Intel packages.

Prices for NEXTSTEP in the Zero-One shops are remarkably in line with prices in the United States. NEXTSTEP for Intel retails at ¥98,000 -



The Zero-One store in Shibuya displays NEXTSTEP prominently.

roughly \$882 (at press-time exchange rates). The developer version is priced at ¥228,000 (\$2052). Those prices are rather amazing, considering that Japanese software traditionally costs two to three times more than the equivalent code in the United States. Canon also sells the white Intel GX as its new, integrated "NeXTstation," and the Zero-One stores sell Digital Equipment Corporation's Intel-based workstations at prices quite similar to those in the United States.

These aggressive prices might be one of the reasons that Japan accounted for seven percent of NeXT's worldwide sales last year, says Higa, who was originally recruited by Steve Jobs in 1984 to work on KanjiTalk for the Macintosh and followed him to NeXT a few years later. Those figures are even more impressive, Higa says, considering that NeXT didn't have a Japanese version of NEXTSTEP 3.1 available until September 1993 - more than a year after the product was introduced at home. Before NeXT went out of the hardware business, more than 5000 black boxes were sold in Japan, according to Higa.

But above and beyond character support and hardware integration, NeXT has had its greatest success in Japan with what is perceived as a problem in the rest of its market: the wide selection of software that's available for NEXTSTEP.

## The subject is software

English-language NEXTSTEP applications from the United States and Europe

PHOTOGRAPHS BY SIMSON L. GARFINKEL



will run on Japanese-edition NEXTSTEP systems without modification. With the exception of programs like word processors, which implement their own text object, English-speaking applications will even support in-line entry of Kanji characters.

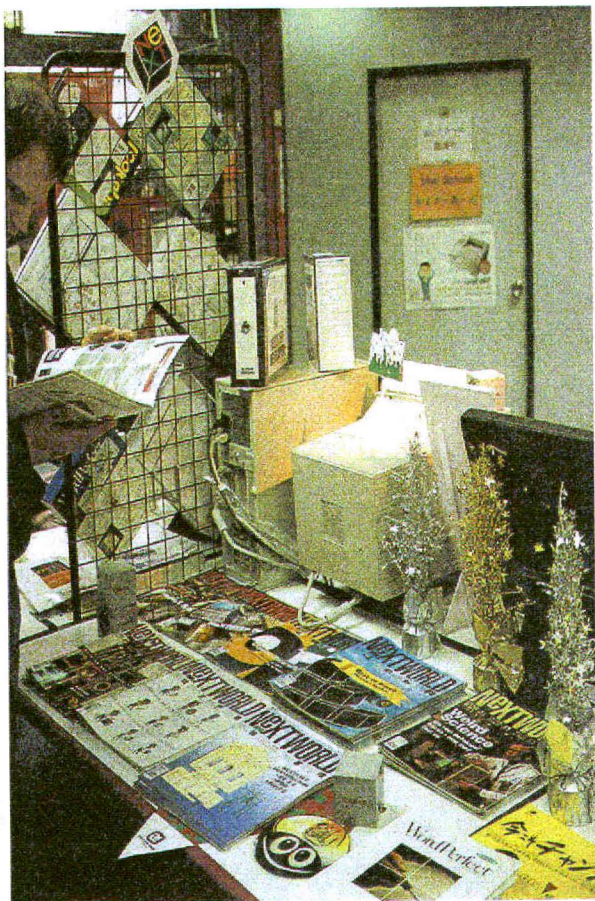
Nevertheless, few Japanese are willing to tolerate applications that do not have menus, inspectors, and alert panels translated into Japanese. At the same time, few of NeXT's third-party developers have had the resources or the inclination to translate their programs into Japanese. For these reasons, Japan has seen an explosion in native-grown applications for NEXTSTEP that rivals NEXTSTEP development in the United States.

At last count, there were more than 50 different Kanji-speaking NEXTSTEP applications for sale in Japan. Some of the programs are uniquely Japanese, like Bridal Vision Guide and Banquet Vision, both \$30,000 programs for planning formal social events. Others are more mundane, like a package for integrating Display PostScript graphics into traditional C, Fortran, and Pascal programs. Nevertheless, Higa says, the most popular programs are translated versions of English NEXTSTEP applications. "Lighthouse is probably one of the biggest sellers here," Higa says.

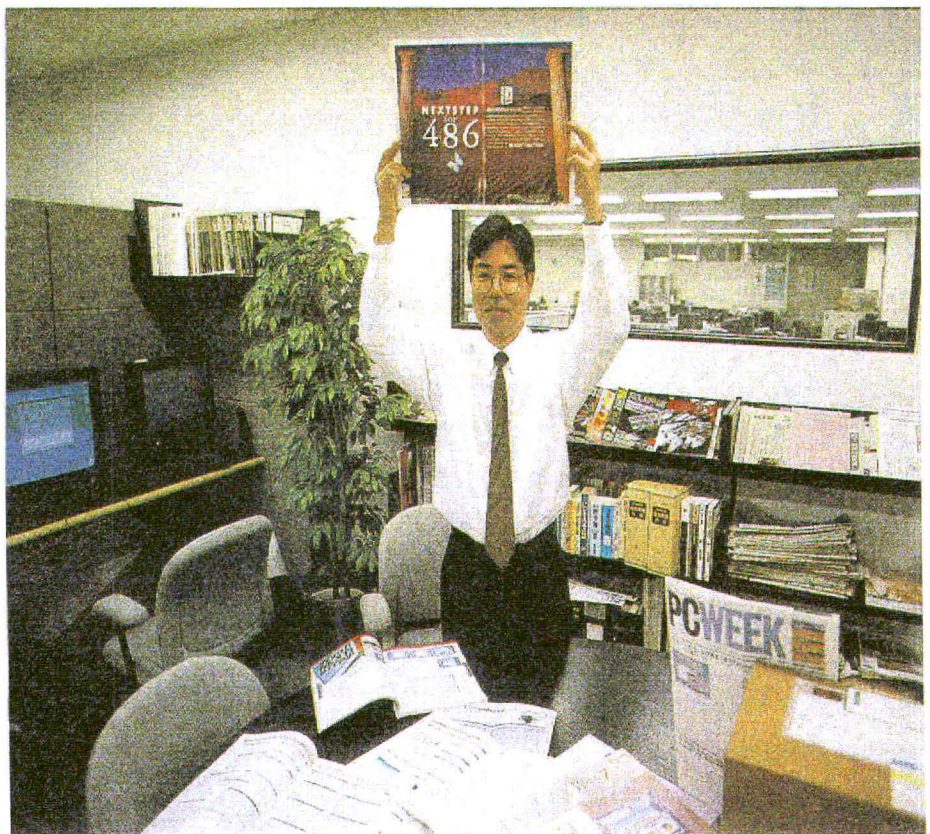
Surprisingly, Japan has also become a haven for programs that are no longer available in the United States because their original publishers have gone out of business or lost interest in the NeXT marketplace. WingZ 1.2J and Improv J are still for sale in Japan, supported not by their original publishers but by Canon. Appsoft Image can be purchased despite Appsoft's demise. Canon is even selling its stock of black NeXTcubes and NeXTstations - if you can afford them. (Canon had priced NeXT hardware in Japan two to three times higher than the comparable prices in the United States. Fortunately, the company has learned its lesson and is not charging high markups on Intel-based systems.)

Despite all of the available software, people who actually use NEXTSTEP-based computers - especially transplanted engineers from the United States - are quick to complain that they can't seem to get the programs that they want. That is, they can't pick up the latest copy of NeXTWORLD and have their company order a copy of NXFax or Create. The problem, according to these engineers, is rooted in both culture and regulation.

Culturally, Japanese companies are loath to order anything from outside the floating kingdom. American professors at the University of Aizu (which has a small but growing installation of NeXTcubes and NEXTSTEP for Intel machines) and at the International Media Research Foundation (which has a collection of NeXTstations for music research) report that their requests to order software and hardware from the United States are subtly discouraged, delayed, or lost by their Japanese superiors. "I've given up trying to order software from the U.S.," says one researcher in Tokyo. Others report that mountains of paperwork must be filled out to buy something as simple as a \$69 MIDI converter.



Prospective customers can also find NEXTSTEP resources at Zero-One.



James Higa shows off a Japanese magazine article heralding the arrival of NEXTSTEP for Intel.

The other problem is regulatory. Although researchers can call overseas from their home telephones and order software with their own credit cards, software purchased this way must be for their own personal use. Anything that is to be used by a business or university must be purchased from an official distributor, which usually marks up the price anywhere from 50 percent to 150 percent over the U.S. list.

NeXT's Higa sees these problems changing as NEXTSTEP gains momentum in Japan. "Software companies are very bad at worldwide programs, product support, and pricing and availability. So generally you have to go through whatever distributors you have to [get software into] in Japan. If there aren't any distributors, you are out of luck. [The problem is] especially acute during the start-up period.

"Once a platform starts getting momentum, it's not a problem. U.S. software companies will make a decision on their own to come in here, and you have all these Japanese companies clamoring to get the distribution rights," he says.

Higa is counting on NeXT's mission-critical custom-application strategy as the basis for his sales in Japan and the Pacific Rim for the same reason that it has been successful in the United States and Europe: Companies have tried shrinkwrapped software and been dissatisfied with the results.

In the meantime, one of the big problems that NeXT has always faced in Japan will evaporate when NeXT moves to NEXTSTEP 4.0. Until now, NeXT has always had to internationalize each version of NEXTSTEP to accommodate the Kanji's 16-bit characters. NEXTSTEP 4.0 will eliminate this disparity by using UNICODE (the 16-bit code that replaces ASCII and includes Asian characters in addition to European and Roman character sets) throughout the operating system.

"Even now, the systems aren't that different. The core is the same, Mach is the same, NEXTSTEP is the same. The only difference is the Kanji-input routines, the input manger, and the fonts. Other than that, it is pretty much the same system. The text object does two-byte, but fundamentally, in the English system, it does that as well," says Higa.

Eventually, though, even those minor differences will be gone, and NEXTSTEP will truly international. "In this age of Internet and global networking, we need a new ASCII that is multilingual," adds Higa. NEXTSTEP will surely be one of the first operating systems to have it. ♦

SIMSON L. GARFINKEL is a senior contributing editor to NeXTWORLD.



**W**ith all the talk about the nation's growing information super-highway, those of us who have the privilege of sitting in front of networked computers are increasingly concerned about computer security. And as NEXTSTEP developers deploy mission-critical custom applications into trading floors, banks, and hospitals, computer security has become a concern for all NeXT customers.

So it's somewhat surprising that NEXTSTEP's model for computer security seems to be trapped in a time warp that dates back to NeXT's founding in 1985. NeXT still offers standard Berkeley UNIX 4.2 tools: Pick a good password, don't put anybody in your .rhosts file whom you don't trust, and don't use NFS to export a file system to untrustworthy hosts.

Unfortunately, state-of-the-art security in 1985 just isn't good enough for 1994. Customers should be able to put their workstations on the Internet without giving away the keys to their business.

NeXT did make one foray into the wacky world of computer security two years ago, when, at the 1992 NeXTWORLD Expo, Steve Jobs demonstrated new encryption facilities that had been developed for NeXTmail and the workspace. Computer security, or at least encryption, would be part of NEXTSTEP 3.0, Jobs told a rapt crowd. Unfortunately, he spoke too soon. But it wasn't a question of whether NeXT's so-called "Fast Elliptic Encryption" violated existing patents on public-key encryption; the real problem was — and remains — U.S. export restrictions on cryptographic technology. NeXT can't embed encryption algorithms inside its operating system and sell it overseas.

Encryption aside, there have been a lot of significant advances in computer security since 1985. Applications based upon these developments are

now finding their way into the operating systems of NeXT's competitors. Plain and simple, NeXT has some catching up to do:

- NeXT should adopt MIT's Kerberos system for network security as the basis for its security model. (The Open Software Foundation has already made a Kerberos-based system a fundamental part of its DCE.) Kerberos could provide badly needed security for NeXT's NFS network file system, distributed objects, Display PostScript, and access to the workspace.

- NeXT should license the Andrew File System (AFS) from Transarc and bundle it into the kernel or make it available as a reasonably priced add-on.

- NeXT should update its NFS to incorporate TCP-based NFS, which provides better security and, as an added benefit, better performance over SLIP and PPP links.

- NeXT should create an authentication API for its log-in panel or, better yet, embed provisions for token-based security systems such as Security Dynamics' SecurID card.

Perhaps the new partnership with Sun will nudge NeXT into improving NEXTSTEP security. While Sun is no standard-bearer in offering secure systems (it was laziness on the part of Sun's programmers that made possible the 1988 Internet Worm), it has a reputation of taking security more seriously than the folks in Redwood City.

One thing, however, is certain: Implementing security is hard, thankless work. It takes expensive, high-powered programmers who are skilled in the art. And if everything works as planned, you'll never know if your security measures are effective or not. Indeed, most companies discover problems with system security only when it's too late. ♦

SIMSON L. GARFINKEL is a senior contributing editor to NeXTWORLD.

## Trapped in A Time Warp

SIMSON L. GARFINKEL

## NeXT AND HEWLETT DELIVER THE POWER OF OBJECT

Financial services is an industry in which time is critically important.

Here, where every second can mean the difference between profit and loss, some companies have already harnessed the power of software objects in select departments to stay ahead of rapidly changing markets.

Now NeXT and Hewlett-Packard together offer a suite of business solutions that spread this power throughout the entire enterprise.

### ANNOUNCING OBJECT•ENTERPRISE.

Object•Enterprise combines the strengths of two technology leaders to offer what no one company can: a unified enterprise-wide information system based entirely on object-oriented software.

In a time-conscious business such as a brokerage firm, this type of system offers an irrefutable advantage. Because it allows a new generation of financial applications to be developed and deployed at every level of the organization — with radically greater speed.

Object•Enterprise brings NEXTSTEP™ software to a full spectrum of Hewlett-Packard hardware, from PCs to workstations, with full support for NEXTSTEP objects on business servers. The result is a seamless and scalable system that offers a true competitive advantage.

NEXTSTEP: "...PROBABLY THE MOST RESPECTED  
PIECE OF SOFTWARE ON THE PLANET."

The opinion is from *Byte Magazine*. The fact is, NEXTSTEP is without rival as the only shipping object-oriented user and development environment.

Many Wall Street traders are already reaping the benefits of this technology, deploying complex custom applications in months instead of years.

That's because NEXTSTEP allows applications to be constructed in a modular





**N**eXT sales should be congratulated for making its \$10-million software-sales goal for the last half of 1993 almost to the dollar. But how did it know? How did the numbers come in so exactly?

Even more importantly: Are NeXT's forecasts for 1994 – 100,000 seats and \$50 million – as accurate and reliable as the 1993 numbers?

It turns out that there are almost no surprise sales in the NEXTSTEP universe. Just as major-league ball players can be spotted a mile off as they develop in the minors, a major NEXTSTEP sale is a two-step process. First, NeXT must secure a design win, in which a company commits to buy a few dozen machines and create a custom application. It's like having a phenom on your minor-league team.

Anywhere from six months to two years later, the company deploys the custom app, entering the Holy Grail phase when it orders several thousand units of NEXTSTEP. In baseball, this phase is when the so-called rookie is brought up to the majors after several years of careful nurturing.

Warren Weiss and his team determined that, in 1993, the number of accounts ready to deploy, plus a few new accounts on a fast-deployment schedule, plus the percentage of sales that come from nonmajor accounts, would total that ten million, if it was all carefully managed.

In 1994, because of the long development cycle, most of the \$50-million goal must come from accounts now in design phases and set to deploy in 1994.

There are two traps that NeXT could conceivably fall into: First, it could be counting on every single one of these design wins to go to the deployment phase – an unrealistic expectation. Also, it could take design wins for granted, forgetting to nurture and serve them all the way to their conclusion.

It is unreasonable to expect that the company will retain all of its poten-

tial accounts, just as you always lose a few tadpoles to larger fish like the Pacific Northwest Giant Salmon (*Fishus Gatesius*). Too often, NeXT has trumpeted a new account as a "1000-unit account" years before the customer had made a final decision. In a very large corporation, several design efforts costing millions of dollars might be in process at the same time to pick the winner for the big deployment. Lesson: NeXT must have far more than 100,000 irons in the fire to make its 1994 numbers.

But in addition to all of the design-win accounts that must be brought to maturity, the sales force must continue to get those new design wins if it expects to have any kind of decent 1995. Existing markets must be exploited, and new Sun and HP customers must be snared into the NEXTSTEP fold.

It seems to me that these require different skills. Bill Weseman has begun to bifurcate the design and deployment functions by having telesales push one- and two-unit pilot programs, but the sales force working with the Object Channel still handles both large design wins and deployments.

I suggest that NeXT align its sales force into teams that have members that specialize in each function. Specific account specialists could be assigned at the time of a design win to shepherd projects all the way through while the salespeople seek out more opportunities. Patterned on the developer-advocate model, these employees could be termed corporate-developer advocates.

That way, the phenom customer of today could grow successfully into the major-league player of tomorrow, and NeXT could do the same, making it to the big leagues. ♦

DAN LAVIN *comments on business issues in NeXT Ink.*

## Spring Training

DAN LAVIN

# PACKARD NOW ON AN ENTERPRISE-WIDE SCALE.



fashion, using software objects as building blocks. These objects, easily re-used and maintained, take the place of complicated and error-prone computer code.

While the rest of the computer industry is still years away from implementing an object-oriented system, NEXTSTEP is here today. Polished and perfected in its third release

### AN OBJECTIVE POINT OF VIEW, FROM DESKTOP TO DATA CENTER.

Hewlett-Packard has long led the drive toward interoperability and object computing, offering a scalable hardware architecture from client desktop to the enterprise-wide data center.

With a family of products including Intel® 486-based Vectra PCs, PA-RISC workstations and business servers, Hewlett-Packard delivers leading technology at all levels. Along with quality engineering and rock-solid service and support.

By joining in Object•Enterprise with NeXT, Hewlett-Packard is redefining the level of performance you can expect from an advanced trading system. And its industry-standard hardware provides the assurance that Object•Enterprise will integrate seamlessly with your existing investments.

### SEE HEWLETT-PACKARD AND NeXT. NOW IN CONCERT.

Object•Enterprise gives you one point of contact to tap the collective power of Hewlett-Packard and NeXT. And we do encourage you to make contact.

Just call us at 1-800-TRY-NeXT. We can supply you with more information, and reserve seats at an upcoming Object•Enterprise seminar in your area. (We'll be conducting seminars throughout the country in 1994.)

We think it will be a day well spent. And we're keenly aware of how valuable your time can be.





# Decaf Development

*Brew your own apps with Professional Software's development environment*

by SIMSON L. GARFINKEL

**E**SPRESSO! Developer provides an entirely different way of brewing NEXTSTEP applications. In a way, Professional Software's developer environment is actually more like cappuccino than its namesake, since its purpose is to soften any sting of NEXTSTEP much as steamed milk softens the Italian coffee.

ESPRESSO! enables programmers to create form-based, data-driven applications for viewing and modifying information stored in complex relational databases without having to learn how NEXTSTEP works. But using it comes with a high cost: utter dependence upon Professional Software for timely bug fixes and advances in its development environment, the

additional points of failure that come with using a complex application, and less flexibility than the native NEXTSTEP environment provides.

Instead of forcing a developer to master object-oriented programming, Objective-C, and the nuances of the AppKit and DBKit, ESPRESSO! gives the developer a more familiar paradigm: sophisticated text fields, push buttons and sliders, a fourth-generation C-like scripting language called ESL (ESPRESSO! Scripting Language), and a top-down programming methodology that would make any Cobol or BASIC programmer feel comfortable.

#### Extensions, exits, roots, and bases

To make all of this plug and play in the NEXTSTEP environment requires

the use of a counterintuitive set of four NEXTSTEP InterfaceBuilder objects. Every application that uses ESPRESSO! must have an ODExitMgr and ODRoot object in its main nib file. You'll also need an ODWindowBase object for every window your application intends to display. Although Professional Software's documentation sort of explains what these objects do, the company never shares its design rationale with the user.

Once you have set up an ESPRESSO! nib, you simply drag out

traditional NEXTSTEP objects such as TextFields, Buttons, and other Controls. Then, instead of connecting the objects on the screen to objects within your program, you connect the ESPRESSO! object to the controls on the screen. By doing so, you change the control into an ESPRESSO! Extension. The extension lets you alter the behavior of the NeXT-provided objects. For example, you can use ESPRESSO! to create a TextField that will only hold date and time values, or only store floating-point numbers or currency amounts. Thus, ESPRESSO! Developer embodies most features of Objective Technologies' SmartField Palette at a very competitive price.

The power of ESPRESSO! extends beyond simple input restriction. Using Professional Software's scripting language, you can write your own procedure, which can be automatically called before or after a field's value is changed or as each key is pressed. You put these ESL functions in their own file and compile them with the ESL compiler that Professional Software provides. Finally, you tell each object on the

**ESPRESSO! Developer**

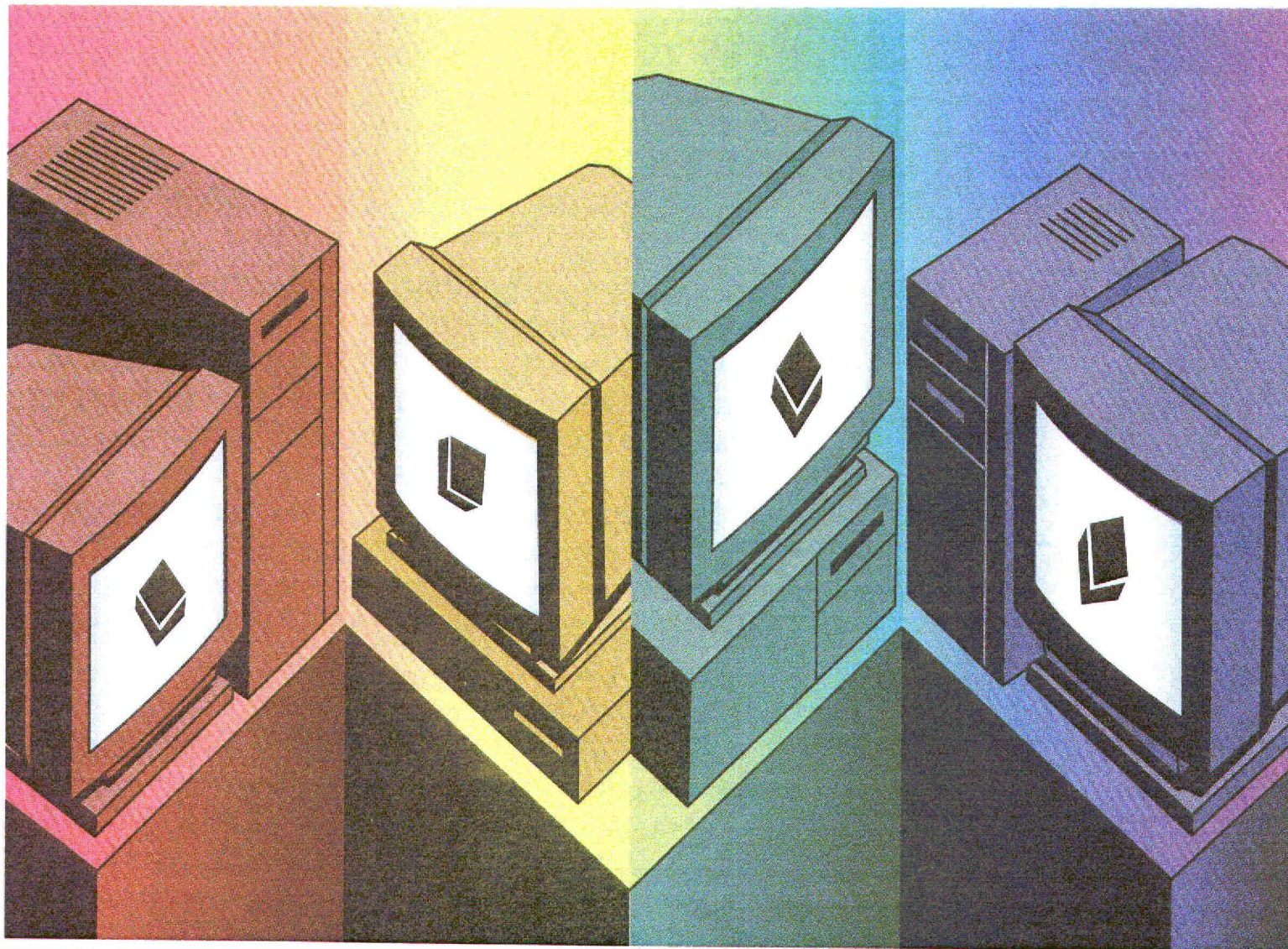
★★★★

A 4GL development environment that allows programmers to create database-driven applications without programming in Objective-C. Initially powerful but ultimately limiting, developers who wholeheartedly adopt the ESPRESSO! paradigm may not be able to realize the full potential that NEXTSTEP offers.

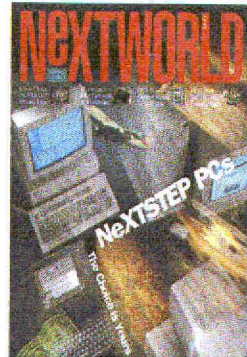
**\$495**

Professional Software, 591 North Ave., Wakefield, MA 01880, 617/246-2425, 800/246-4664, 617/246-1443 fax: psd@logibec.com.

## We keep the score on NEXTSTEP hardware



**W**ith hardware options multiplying every month, the task of choosing a PC, workstation, or server to run NEXTSTEP can overwhelm your technical staff. NeXTWORLD's monthly Box Scores cut through the marketing claims with real performance testing. From the desktop to the data center, NeXTWORLD tracks the hits, runs, and errors. Call 800-685-3435 to subscribe now.





screen which extension to run by typing the extension's name into the OD-WindowBase Inspector. Be sure to get the spelling of the name right, or else your application won't work.

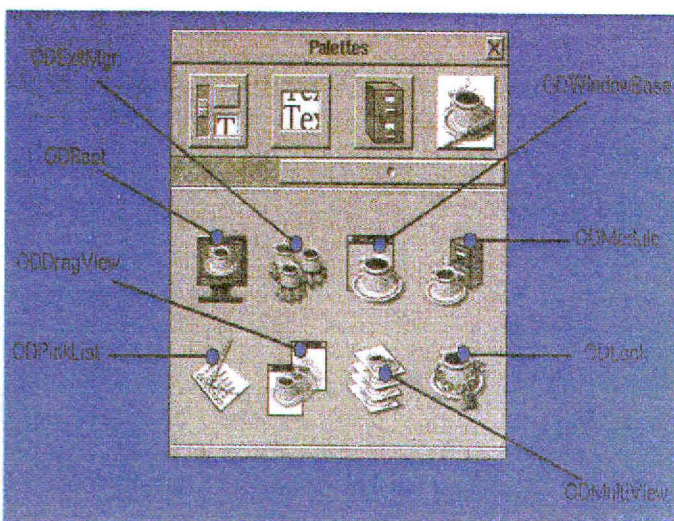
Professional Software calls these ESL code snippets

"exits" (a term sure to initially confuse any NEXTSTEP programmer). Although the ESL language looks like C, it isn't. ESL only has 126 built-in functions (far fewer than NeXT provides as part of its ANSI C development system), which are documented in a single 131-page section of its manual (though the manual is available only on-line). An API allows you to call standard C functions from ESPRESSO! and vice versa. Companies considering ESPRESSO! should carefully evaluate this unique dependence on a proprietary language and compiler, a unique situation in the NEXTSTEP third-party world.

Developers hacking NeXT's DB-Kit will be intrigued by the ESPRESSO! ODMultiView object, a DBKit "extension." Using ODMultiView, you can perform qualified selections on a set of database records, change the sort order, or alter the sequencing of retrieved records.

Three of the remaining ESPRESSO! objects can add basic functionality to any NEXTSTEP application: ODDragView, and ODPickList. All three allow you to change or customize their behavior with ESL. Unfortunately, Professional Software doesn't provide enough documentation to let you modify them the traditional NEXTSTEP way: by subclassing the Objective-C classes. Consequently, what you can do with these objects is limited to the few operations that Professional Software thought ESL programmers might want to perform.

The last object in the ESPRESSO! Developer library is ODLock, a pointed object with the sole purpose of preventing other people from opening your InterfaceBuilder nib files. Locking an ESPRESSO! nib is important, since most of an ESPRESSO! application can be run from InterfaceBuilder's Test Interface mode. Un-



ESPRESSO! Developer's palette includes eight objects for InterfaceBuilder.

fortunately, ODLock is a dangerous little object. Make one typo, and you might find yourself locked out of your own project.

### Locked in, locked out

But the real problem with ESPRESSO! is that it locks the developer in to the subset of NEXTSTEP that Professional Software thinks is worthwhile. Of course, no serious developer would consider using ESPRESSO! to write a word processor or a 3-D modeler. Unfortunately, aspects of such sophisticated applications have a tendency to pop up in the most banal custom apps. When they do, the power of NEXTSTEP helps you solve your problem – unless you're using ESPRESSO! instead.

For example, a general-ledger system written with ESPRESSO! might use Cut and Paste to move text about, but it could never use that method to transfer journal entries from one checkbook to another, since catching these events and handling them intelligently is beyond the abilities of ESL. To do so, you would have to bypass the very functionality that makes ESPRESSO! initially attractive to developers.

Companies that don't want to dead-end on the road to high-speed application development with NEXTSTEP would do well to skip the coffee break, buckle down, and learn the nuts and bolts of Objective-C and NeXT's Application Kit. It will be well worth the effort. ♦

SIMSON L. GARFINKEL  
is a senior contributing editor to  
NeXTWORLD.

## STEP UP YOUR OUTPUT

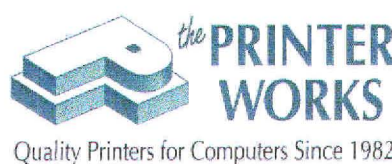


StepWriter-BX and StepWriter-NX are new laser printers designed exclusively for all computers running NEXTSTEP that have a SCSI port. The StepWriter-BX is perfect for desktop publishers who require high-resolution laser printing on letter, legal, or tabloid-sized (11x17) paper. This 8 ppm model is based on the latest 600-dpi BX engine from Canon.

The StepWriter-NX is based on Canon's new 600-dpi NX engine. This speedy 17 ppm printer is perfect for shared use on a network. It features an offsetting paper delivery assembly that can place each user's job in a separate stack. The StepWriter-NX can also be fitted with an optional duplex mechanism for automatically producing double-sided reports and manuals.

Both StepWriter models come bundled with eXTRAPRINT Laser from GS Corp. EXTRAPRINT is licensed to harness the power of the Adobe PostScript interpreter built into NEXTSTEP for use with laser printers. Use of the Adobe PostScript interpreter ensures that all text and graphics will print exactly as you see them on screen.

Call The Printer Works for the fastest and best way to print from NEXTSTEP. Free print samples and literature available.



Quality Printers for Computers Since 1982

800-225-6116

3481 Arden Road,  
Hayward, California 94545

Intl. Tel: (510) 887-6116 ■ Fax: (510) 786-0589 ■ e-mail: tpw@netcom.com

BX and NX are trademarks of Canon, Inc., eXTRAPRINT is a trademark of GS Corporation, NEXTSTEP is registered trademark of NeXT Computer, Inc., PostScript is registered trademark of Adobe Systems, Inc. StepWriter-BX and StepWriter-NX are trademarks of The Printer Works, Inc.

Circle 1 on reader service card



# Report for Duty

*Ocean Software's Complete Access puts information at your fingertips*

by SETH ROSS

**W**hether data lives on water-cooled iron or a web of workstations, it only has value when people can access it and put it into useful, readable reports. Drafting business reports from corporate databases, though, has typically been grunt work.

But that could change with the combination of NeXT's DBKit and Ocean Software's Complete Access, a report-writing application based on modular and interchangeable components.

Complete Access puts an arsenal of data querying, fetching, and reporting tools at the disposal of a programmer or advanced user. Finished Complete Access documents (called "containers") generate reports (called "layouts") that can be run at will by novice users.

If you're an executive or technologist that regularly must analyze and report on vast arrays of data, you should seriously consider this application. Given the right situation, Complete Access could justify the adoption of NEXTSTEP.

We evaluated late beta versions of Complete Access 1.0 and found

that it provided easy access to data living on a Sybase server. All but a few features were functioning in the version we reviewed, and the rest should be complete by the time this review appears in print.

## The component is the message

A Complete Access container is divided into five component types: Model, Data Set, Layouts, Queries, and Calculations. Components can be created separately and then mixed and matched to create different containers.

Complete Access is designed to work with any relational database engine that has a DBKit adapter, including Sybase and Oracle. Strictly a reporting device, the program cannot administer or build a database, nor is it designed to let you make changes. The Model component is used to connect either directly to the database or to models created with the DBModeler app, which is included with NEXTSTEP Developer. This process will typically require someone with database experience.

Using the Data Set component, you can suck in data from a wide variety of sources. The database defined by the Model component is the

common choice. But you can also import Tab-limited text files created by other applications like DataPhile or Improv. Just drag the file from the Workspace Manager and drop it in the Data Set Inspector's well.

## Laying out the data

Now the power user with little database experience can get into the act. The core of Complete Access is the Layout component, which produces the physical documents and deliverables. It's a snap to lay out data in a wide variety of common report formats, including mail-merged form letters, labels, and envelopes.

Complete Access allows you to toggle between a design mode and a browser mode. In design mode, the app provides a battery of design tools arranged in a horizontal tool bar, including drawing tools and a variety of objects (like text fields, memos, checkboxes, or pictures) that can hold data from your database. Simply click the appropriate mini-icon and start drawing your layout's fields.

## Quick queries

Queries determine which data will be retrieved from a database. One barrier to the widespread adoption of SQL databases is the difficulty of mastering SQL's syntax. Complete Access obliterates this barrier.

You don't have to know a shred of SQL to compose complex database queries with Complete Access. New queries begin with at least one query criteria—a formula that sets up the query. To build a query, simply select and drag a field from the table browser and drop it on the query criteria. Click the Relational Operator button and choose from operators like <, ≤, =, >, ≥, and so on. Finally, type in a parameter you want to match. For example, say you need to search a customer database for anyone by the name of Jones. Drop the name field into the criteria. Select the relational operator "=" and use "Jones" as the parameter. You've set up a query that will retrieve records with "Jones" in the name field.

Complete Access lets you seamlessly create complex queries with multiple criteria, which are often built around these operators: AND, NOT AND, OR, and NOT OR. It's fairly simple to query for, say, the customers who don't have a California ad-

dress and who have ordered more than \$500 worth of product. If you know SQL, you can bypass the graphical query builder and directly input SQL queries.

## The CA advantage

The modular approach of Complete Access represents a boon for individuals and workgroups alike. Any component can be detached from a container and saved in a library. By

## Complete Access 1.0b5 (beta)



*Complete Access is a graphical report writer that allows both novice and expert to seamlessly query, fetch, and present data from SQL databases. The app's modular approach allows users to reuse and share major report components.*

**\$499**

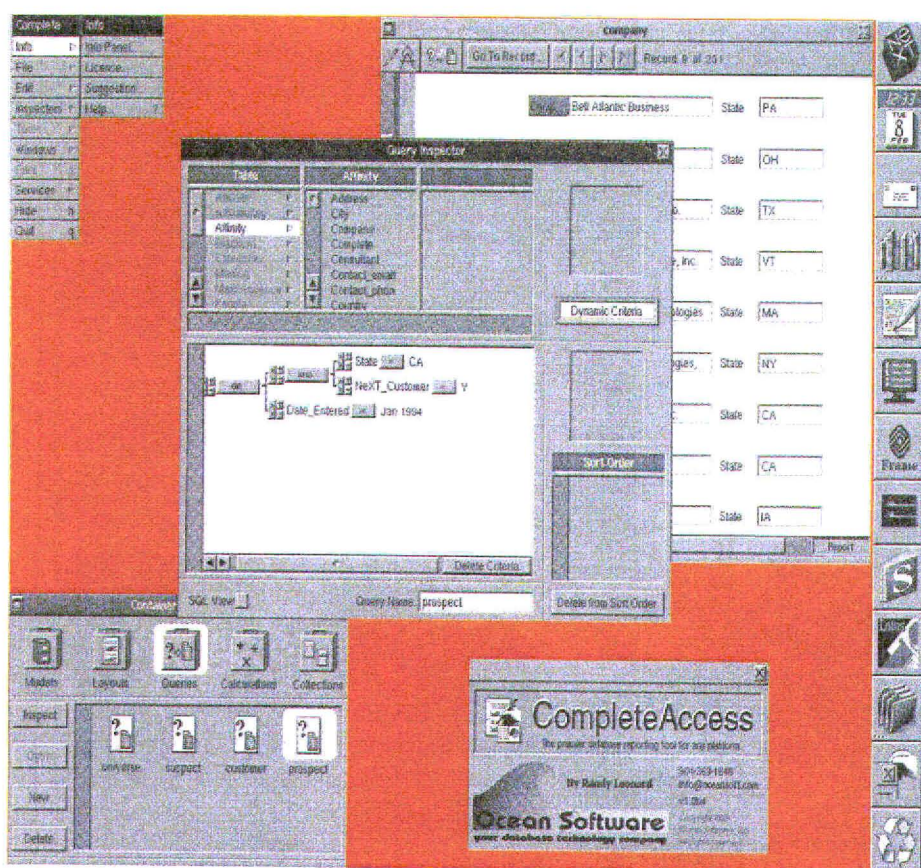
Ocean Software, 4241 Baymeadows Rd., #12, Jacksonville, FL 32217. 904/363-1646, 904/636-5856 fax; info@oceansoft.com.

loading up the library with commonly used components that you can drag and drop into your containers, you save time down the road. Why set up that complicated tax calculation if your co-worker has already figured it out? Why set up a query from scratch if you developed and stored a similar one several months ago? Administrative employees could be taught to run existing containers with almost no training and soon be creating new containers out of tried-and-true components.

One notable absence in this version of Complete Access is charting, the staple of business reports. Ocean will include charting features in Version 1.1, and anyone who buys Version 1.0 is entitled to a free upgrade.

Missing features aside, Complete Access should represent a valuable tool for those who live and die by reports. It's easy enough for the novice yet does not arbitrarily hold back the expert. Assuming that Ocean Software is able to polish its beta version into a solid shipping product, Complete Access should earn a place on the Dock of every database junkie.

SETH ROSS is the publisher of San Francisco-based Albion Books and a contributing editor to NeXT-WORLD.



It's simple to compose SQL queries using the Complete Access graphical query builder.



# Daydream Believer

**A**fter months of hard work and negotiations, Quix Computerware is finally shipping Daydream, a combination of hardware and software that allows black machines to run – not just emulate – Macintosh software. This product represents the first time the Macintosh operating system has been ported to a non-Apple system with Apple's blessings and license.

To provide this dual capability, Quix took the ROMs from the Macintosh LC series and put them in a box that connects to the NeXT DSP port. On the software side, the package uses Apple's System 7.1 and a custom app developed by Quix. We looked at a prerelease version for this review.

Similar to Insignia Solutions' SoftPC, Daydream uses a disk file that acts as a virtual Macintosh volume and holds the System 7.1 files. Unlike SoftPC, however, Daydream doesn't run in a window: Starting

Daydream reboots the NeXT machine under the Daydream kernel and turns it into a Macintosh. The Quix effect is quite amazing, but rebooting to switch back and forth between Mac and NeXT prevents cutting and pasting between environments and limits Daydream to specific, self-contained tasks outside of a user's normal workflow. In contrast, ARDI's software emulator, Executor, is less seamless but operates within the NeXT environment.

## Daydream (beta)



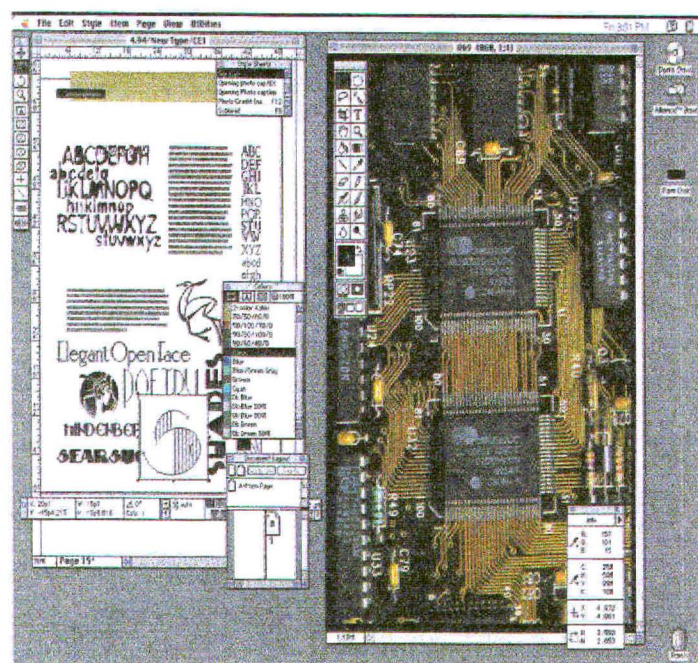
*Quix is an excellent, Apple-approved software-hardware combination that lets a NeXT machine act just like a Macintosh. Runs Mac software flawlessly but requires reboots to switch between Mac and NeXT environments.*

**\$895**

Quix Computerware AG, P.O. Box 306, 6030 Ebikon-Lucerne, Switzerland, 201/928-0420, 41/41/34.88.43, 41/41/34.86.80 fax: quix@applelink.apple.com.

A NeXT using Daydream will talk and act like a Mac, but, because of hardware differences, some limitations do exist. Full 24-bit color video is not supported, printing is limited to Ethernet networks, and support for NeXT laser printers isn't yet ready. Except for scanners, most standard SCSI devices can be used, but ADB devices are not supported.

We were skeptical that a first release of an emulator for a system as complex as the Macintosh would perform well, but it did. Installation took less than five minutes. We tried to choke the Daydream with tasks in Adobe Photoshop, Quark XPress, and a variety of accounting applications from Microsoft Excel to Peachtree's Insight – all from a PLI Infinity Turbo 105S SyQuest drive. We printed to both a Hewlett-Packard



Even Quark and Photoshop couldn't choke Daydream.

DeskJet 1200 C/PS in full CMYK color and an Apple Laserwriter Pro 630 across an Ethernet network.

The result: No problems. The only bug we ran across involved using a modem, and Quix promised to fix it before shipping.

For NeXT users with Mac needs, this package is a dream come true, providing authentic Mac system software with the performance of a Quadra 950 at a fraction of the cost. ♦

by DON WILSON

# NEXTSTEP COMPATIBLES THAT WILL PLEASE!



## Work Station \$2650

- Intel i486DX-33MHz CPU
- ISA/VL Bus Motherbrd, 128K cache
- Diamond Mini Twr case, 230W pwr
- 16MB RAM
- TEAC 1.44 mb Floppy disk drive
- Promise VL Bus IDE controller
- 345MB Western Digital HD, 12ms
- ATI Graphics Ultra Pro VLB, 2MB VRAM
- 15" SVGA Flat Scrn color monitor
- 2 Serial, 1 Parallel, 1 Game ports
- Fujitsu 101 Keyboard
- Logitech 3 button bus mouse



## Basic Developer \$3950

- Intel i486DX2-50MHz CPU
- EISA/VL Bus Motherbrd, 256K cache
- Diamond Mid Twr case, 250W pwr
- 20MB RAM • Dual cooling fans
- TEAC 1.44 mb Floppy disk drive
- Adaptec 1542CF SCSI II Controller
- 540MB Seagate SCSI II HD, 10ms
- ATI Graphics Ultra Pro VLB, 2MB VRAM
- 17" CTX SVGA Flat Scrn monitor
- 2 Serial, 1 Parallel, 1 Game ports
- Fujitsu 101 Keyboard
- Logitech 3 button bus mouse



## Super Developer \$5995

- Intel i486DX2-66MHz CPU
- EISA/VL Bus Motherbrd, 256K cache
- Diamond Mid Twr case, 250W pwr
- 32MB RAM • Dual cooling fans
- TEAC 1.44 mb Floppy disk drive
- DPT 2022 EISA SCSI II Controller
- 1.05Gig Micropolis SCSI II HD, 10ms
- #9GXE Level II VLB, 2MB VRAM video
- 17" MAG MX17F SVGA Flat scrn monitor
- 2 Serial, 1 Parallel, 1 Game ports
- 101 Keybrd • Logitech bus mouse
- Toshiba CDRom, 200ms



## Pentium Screamer \$7995

- Intel PENTIUM, 66MHz
- EISA/VL Bus Motherbrd, 512K cache
- Diamond Full Twr case, 250W pwr
- 32MB RAM • Dual cooling fans
- TEAC 1.44 mb Floppy disk drive
- DPT 2122 EISA SCSI II Controller
- 1.7Gig Micropolis SCSI II HD, 10ms
- microCRYSTAL PCI S3 video, 4MB VRAM
- 17" Viewsonic SVGA Super Hi-Res monitor
- 2 Serial, 1 Parallel, 1 Game ports
- 101 Keybrd • Logitech bus mouse
- NEC Triple Spd CDRom • Pro Audio 16

## QUALITY

Above all, a system from G.E.C. is quality. Very competitive pricing is just a little bonus. Our customers tell us that the reason they buy from us is they know the machine will work, and that if something happens to go wrong, a professional technician is going to make it right in a hurry.

## EXPERIENCE

Try dealing with a company where every salesman knows NEXTSTEP standards and every technician has built, loaded and tested NEXTSTEP compatibles. Our technicians are trained, work closely with NEXT and with our customers on compatibility, and are involved in NEXT user's groups.



**G·E·C Computers, Inc.**

1901 East University Drive, #300, Mesa, Arizona 85203  
Fax (602) 834-1522 BBS (602) 834-6662

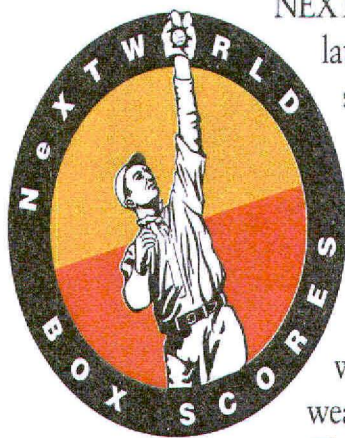
**(800) 486-1000**

**Phone (602) 834-1111**





# Rating the Pentium



NEXTSTEP USERS REQUIRE THE KIND OF POWER THAT ONLY THE latest CPU can provide, so the arrival of the first Pentium systems for NEXTSTEP is welcome news.

NEXTSTEP can take full advantage of the Pentium chip, which provides all-around speed enhancements, as well as specific improvements for compute-intensive tasks like compiling and 3-D rendering. But unlike systems designed to run Windows, UNIX hardware must be carefully balanced. If any one subsystem is weak, the entire machine suffers.


The bottleneck is often hard-disk access. With the right hard disk, a '486 system can approach Pentium speeds. And before you upgrade to the Pentium, you might consider adding more memory to your machine. Many '486 systems allow you to upgrade simply by sticking a Pentium chip in the available overdrive slot. While this may be an economical alternative, it won't provide the system throughput available in a true Pentium machine.

Pentium chips are currently available in 60MHz and 66MHz versions, and a 90MHz version is on the way. The modest speed increase you'll get with the 66MHz version probably isn't worth the heat problems you're likely to encounter. The 90MHz Pentium is expected to include new cooling features that will eliminate the problem.

Many Pentium machines include such recent advances in PC design as a PCI bus, fast SCSI-2, and 32-bit color support. Vendors such as Compaq and Intel are integrating CD-quality sound into their Pentium systems. While power users will want to wait until NEXTSTEP moves onto PA-RISC, a Pentium-based system provides the maximum performance available today. ♦

by DAN LAVIN and LEE SHERMAN

Make  
CHICAGO  
Your  
NeXT  
Step...



Located in the heart of Chicago's Loop, NationsBanc - CRT is your NeXT step towards a rewarding career with an industry leader. Our leading edge technology coupled with a fast paced, casual environment has everything you will need to be successful.

As one of the largest financial derivatives trading firms in the world, NationsBanc - CRT is well known in the financial industry for the state-of-the-art trading systems that support our world-wide trading operations. New projects and developments have created an immediate need for:

NeXT Software Engineers

to design and develop NeXT-based applications for real-time trading and financial engineering.

A BS in Computer Science, or equivalent, and two years experience required. Fluency in C programming language coupled with programming experience in one of the following environments is essential: NeXTStep, X, Macintosh or MS Windows. Solid background in object-oriented languages such as C++, Objective-C, CLOS or Smalltalk also required. Superior communication abilities a must. Financial industry experience, a strong mathematical background and relational database experience highly desired.

Make NationsBanc - CRT your NeXT step. We offer a competitive compensation package and full benefits. Not to mention all the things Chicago has to offer: a low cost of living, highly acclaimed restaurants, night clubs and theaters and world class sports teams.

For consideration, please direct your resume with salary history to: NationsBanc-CRT, Human Resources - Dept NSE, 440 S. LaSalle, Chicago, IL 60605. An Equal Opportunity Employer M/F/D/V.

## NationsBanc-CRT

Circle 57 on reader service card

## Box Score User

### Advance 2000 NeP5-ADS

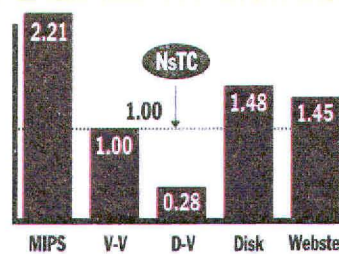


\$7849

#### Configuration

Pentium 60MHz; 32MB RAM; 1GB SCSI drive; CD-ROM drive; 1024-by-768, 16-bit Miro S3 928 graphics; 3 VL-Bus and 5 ISA slots; 17-inch color monitor.

#### NeXTWORLD benchmarks



#### Performance

One of the fastest machines we've seen. Subsystems are tuned for high performance. Pentium from the ground up.

#### Video

Excellent color. Very slow graphics may affect NEXTSTEP performance.

#### System design

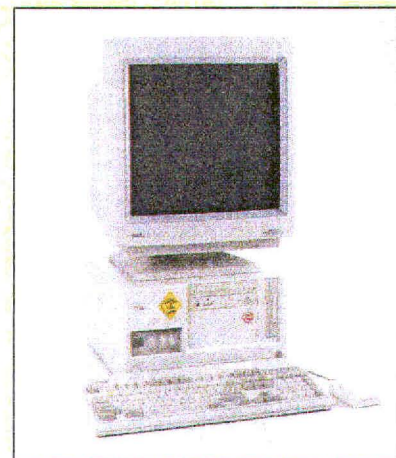
Convenient access to CD-ROM drive and system controls. Somewhat noisy, especially the drives.

#### NEXTSTEP orientation

Advance 2000 is knowledgeable about NEXTSTEP and actively working in the market.

#### Support

Excellent. 30-day money-back guarantee. Lifetime labor with a guaranteed 48-hour turnaround. Lifetime free phone support on hardware. One-year warranty on parts.



#### Value

Expensive system, but a premium solution. Good value overall.

#### Contact

Advance 2000, 8560 Main St., Buffalo, NY 14221. 716/631-5602, 716/631-0569 fax.

## Box Score User

### Pars International BarracudaDX2

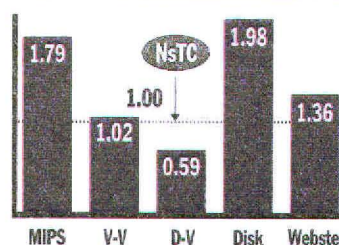


\$5849 (not including NEXTSTEP)

#### Configuration

DX2/66; 32MB RAM; 1GB SCSI drive; CD-ROM drive; 1280-by-1024, 16-bit ATI UltraPro graphics; 8 EISA and 1VL-Bus slots; 17-inch color monitor.

#### NeXTWORLD benchmarks



#### Performance

Fast '486 system. Tremendous disk performance boosts overall speed significantly.

#### Video

Slow ATI graphics, slight jitters, but has high resolution and good color.

#### System design

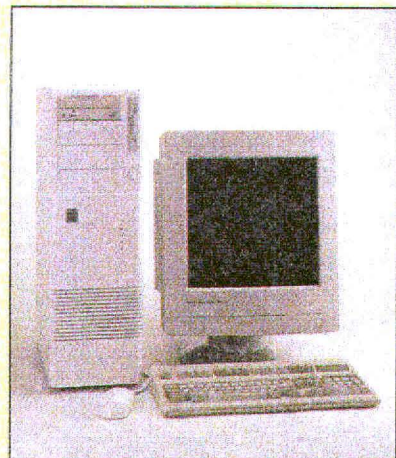
Clunky tower, strong keyboard and mouse. Lots of slots, a number of goodies, including DPT card.

#### NEXTSTEP orientation

Committed to NEXTSTEP, strong UNIX knowledge.

#### Support

One year on parts, three years labor, and promises 48-hour turnaround on repairs. Toll-free technical support. No unconditional money-back guarantee.



#### Value

Low price for a machine with this many goodies. Strong performer.

#### Contact

Pars International, 22441 Foothill Blvd., Hayward, CA 94541. 510/733-0103, 800/947-4742, 510/733-0206 fax.



## StringKit 1.2a



\$649 per developer machine; source code available.

Objective Technologies, 7 Dey St. # 1502, New York, NY 10007. 212/227-6767, 212/227-3567 fax; info@object.com.

Objective Technologies' StringKit is a model object library that should set the standard for other NEXTSTEP developers. In one fell swoop, Objective Technologies provides developers with a comprehensive object for handling all aspects of string manipulation, from simple operations to copying and searching, as well as complicated behavior like parsing and retrieving string information as integers, floating-point numbers, or time and date values. But instead of stopping there, StringKit goes on to add OTStringExtensions categories to NeXT's classes to support its string objects. As an added bonus, StringKit contains a system that the company has developed for managing temporary objects in a global name space. These methods are implemented as categories on the Object class, so they are available to every part of an application. Get StringKit today and end your fixed-buffer overrun bugs. **SLG**

## Crash Catcher 1.1



\$749

WhiteLight Systems, 350 Cambridge Ave. #200, Palo Alto, CA 94306. 415/321-2183, 415/321-2083 fax; info@whitelight.com.

Unexpected application crashes can be one of the most frustrating bugs for a developer to uncover. "It just crashed," complains the customer, who is often unable to offer further details. Well, no longer. With Crash Catcher, a library that you simply link into your existing applications, it is as if all of your users are running your application from GDB. Bus error? Invalid message sent to an object? No matter: Crash Catcher catches the error, generates a detailed back trace (better than GDB's), and gives the user the option of printing it or e-mailing it back to your technical-support department. No serious developer should be without it. **SLG**

# Reviews Desk

**NEXTSTEP remains the home to some of the best developer tools and ObjectWare on the planet. We were blown away by the quality of this month's StringKit. It joins the ZyXEL modem as our only current holder of a perfect five-cube rating. At the risk of sounding pedantic, we encourage budding object designers to study the way Objective Technologies does business. Look at the quality of its objects and documentation. More importantly, look at the kinds of problems the company solves. They're nontrivial yet of general use. These objects are designed to save time for other programmers. Look at your own library of homegrown objects, think about the needs of others, and put in some time crafting some gems. The rewards are there: Just ask five-cube holder, Best of Breed winner, and successful object vendor Objective Technologies.** — **DAN LAVIN**

*This month's gang includes ELIOT BERGSON (EB), SIMSON L. GARFINKEL (SLG), AND MYSELF, DAN LAVIN (DL).*

## Doom 1.2



Free

ID Software, Town East Tower, 18601 LBJ Freeway #615, Mesquite, TX 75150. 214/613-3589, 800/534-2637, 214/686-9288 fax.

Doom is an outstanding game presented as a public service by the good people at ID Software. The company actually wrote Doom for the PC market but developed it first on NEXTSTEP to take advantage of its rapid prototyping. It sells the PC version but gives away the less complete NEXTSTEP version to support the NeXT community. Overall, Doom is an excellent game. You move through an alien base picking up objects, shooting baddies, trying out new weapons, and exploring in general. It sports terrific graphics, lots of intricacies, and hidden tricks without losing sight of its basic role as a shoot-'em-up game. As ID says, you can have a slugfest without requiring the reflexes of a hyperactive eight-year-old. Available at all major archive sites. Highly recommended. Would definitely get more cubes except for its unfinished status. **DL**

## ArtFonts, CoolFonts, BrushFonts 1.0



\$49 (CoolFonts, BrushFonts) and \$59 (ArtFonts)

Ciusa, 3208 W. Lake St., Minneapolis, MN 55416. 612/822-1604, 612-922-4426 fax; ciusa@cup.portal.com.

While the demand for typefaces used

in body copy is always greatest on any DTP platform, the need for display faces — those fonts specifically designed to add zip to headlines or posters — is usually overlooked. Ciusa's latest offering, three sets of sometimes wild, sometimes elegant display faces, reaffirms the company's commitment to the NEXTSTEP publishing market. Each set comes with FontAide, a "mini TypeView" utility, as well as documentation that could be glitzier (this is, after all, a font package). Ciusa is planning to include an installer from Metrosoft in the future that should make the clumsy NEXTSTEP installation process easier. Aside from wondering why certain fonts were included — only Anthony Perkins at his worst would use Psycho, while Exclusive sets new standards for unreadability — these packages are well worth the introductory pricing. Get 'em now. **EB**

# Workstation 2000<sup>tm</sup>

Dedicated to the NeXTSTEP<sup>tm</sup> Community

Pre-loaded  
and Tested  
with  
NeXTSTEP<sup>tm</sup>

New Products!  
New Pricing!



The  
Newest  
Hardware  
with the  
Latest  
Drivers!

Your Company's Source for the

**PROFESSIONAL / GX Workstation**

#1 in Quality

619-723-4827 sales / support 619-723-4392 fax

NeXTmail: tfinn@gun.com

Circle 31 on reader service card





## XEROX

## NetInfo

## NEXTSTEP NetInfo for Heterogenous Networks

NetInfo is a flexible and extensible database system for information about computer and network configuration. It is highly-regarded for its ability to easily manage complex heterogeneous networks via a powerful NEXTSTEP graphical user interface. It is currently available for SPARC, Auspex, HP/UX, RS/6000 and OSF/1. Through the graphical administration tools of NEXTSTEP, NetInfo can manage all of the UNIX workstations on a network. It also allows file and compute servers to act as NetInfo servers for the entire network. In this way, NetInfo provides flexibility for storing and distributing general, as well as custom information.

## Notebook

## Information Processing Application

NoteBook is for everyone seeking a convenient way to manage everyday flow of information and ideas. It's a revolutionary application whose power comes from two breakthroughs. First, NoteBook uniquely combines an outline processor for creating lists of information with a visual "notebook" metaphor for management. Together, they make storing and organizing information simple and elegant. Second, NoteBook employs Dynamic Index Views technology (Pat. Pending 1992), allowing you to instantly view "cross sections" of your information. It's like having the power of a sophisticated database query system without the complexity.

## Screen Machine II

## Real-Time Video Digitizer/Multimedia Board

Screen Machine II—1993 NeXTWORLD Best of Breed—is a real-time true-color or grey scale video digitizer and a multimedia board capable of displaying live video in any size at any monitor position. It combines high-quality image recording, digital video signal processing, and real-time video display on a single board for your Intel 486-based PC running NEXTSTEP. It is the first video overlay board to support non-interlaced resolution of 1024 x 768 at screen frequencies of up to 76Hz in graphics mode. Screen Machine II incorporates the Professional Video Scaler and the Video Memory Controller (VMC) which increases the display quantity of the live video and provides video effects/overlays, such as luma, chroma keying, mosaic, etc., respectively.

## CHARTSMITH

## Business And Scientific Charting Application

CHARTSMITH is a presentation quality charting and graphing package that allows the novice or expert user to create business and scientific charts quickly and easily. The focus of the CHARTSMITH user interface is the Chart Window where charts and graphs are displayed and directly manipulated. A single Chart Window corresponds to a CHARTSMITH document in which any number of charts can be stored. In coordination with the Chart Window is the Data Window, where the data—that is graphically represented in a chart—is entered and stored. From any given chart, a CHARTSMITH template can be built, storing the attributes of a chart so that future charts can be identically formatted.

## Pre-installed/Warrantied Hardware

## Pre-Loaded With NEXTSTEP And Demonstration Applications

Intel 486 DX2/66 Mhz ■ Mini-Tower or Tower case ■ 256KB write-back cache ■ 2 VESA local bus and 6 EISA slots ■ Up to 128MB RAM ■ 240MB, 540MB, 1.2GB, or 2.4GB hard drive options ■ ATI Graphics Ultra Pro video card w/ 2MB VRAM (1120 x 832 @16-bit w/Rev. 6 card) ■ Intel Ether Express ethernet card ■ 17" high-resolution monitor ■ Adaptec 1542C SCSI card ■ 3.5" floppy drive ■ 2 serial and 1 parallel port ■ 101 keyboard ■ Logitech bus mouse ■ Optional 2-year warranty

## Tailor

## Graphical PostScript Editing Application

TAILOR is an essential application for publishing and page layout tasks. TAILOR can edit any PostScript (PS and EPS) document, including multi-page PostScript files imported from MS Windows or Macintosh platforms. TAILOR can move, reshape, or delete all types of graphic objects, such as line art, text and pixel images. It can recolor, modify or add line art; alter typefaces; add or modify text; and regroup text lines into paragraphs for more flexible editing. TAILOR can then save the results back into a PostScript file or use the standard copy and paste functions to place them in any NEXTSTEP application.

## NetWatch

## Easy-to-Use SNMP Monitor Application

NetWatch is an easy-to-use SNMP monitor application that runs under NEXTSTEP. NetWatch supports SNMP MIB-I and MIB-II as well as Ridgeback Solutions' SNMP AGENT for NEXTSTEP and SunOS. The SNMP AGENT extensions allow access to: file system(s), swapfile(s), processes running, CPU utilization, and who's logged in.

- Topology maps and network representation
- Node icons
- NetInfo support.
- Queries and more ...

## Questor

## Matrix-Based Spreadsheet Application

Questor is a spreadsheet application for NEXTSTEP that combines the intuitive metaphor of matrix-based spreadsheet with a number of very powerful features and a true NEXTSTEP interface. Questor includes a powerful scripting language, a seamless SQL database interface and a flexible API that makes Questor the perfect tool for any type of problem solving.

The backbone of Questor is a conventional matrix-based spreadsheet application that can easily be used by anybody that have once used spreadsheet applications like Microsoft Excel, Lotus 1-2-3, or Wingz.

## Vario Data Pro

## Multi-User Database Application with SQL Front-End

VarioData Pro contains two applications: VarioBuilder and VarioData. VarioBuilder is used to create a new database and modify an existing one, while VarioData is primarily used for the actual database front-end itself.

- SQL connection: work with existing tables (created in other programs) or choose "read-only" or "modifications possible."
- Supports Sybase, Informix, Oracle, Interbase.
- Scripts: define formulas to use VD automatically
- Report design
- Formulas
- Formula inspector
- Report inspector
- Barcodes generation
- Multiple database windows
- User-definable labels
- Help lines for texts, ruler, alignment, definable grid, fonts, etc...
- Extended print panel: fax merge, print, email
- Multi-user support with safe record locking
- Album and many more.



# NEXTWORLD

## FREE PRODUCT INFORMATION

**1** Simply print your name, title, address and telephone number on the attached card. And answer the three questions.

**2** Circle the numbers on the card that match the number at the bottom of the ads which interest you.

**3** Mail this card today.  
POSTAGE IS ABSOLUTELY FREE!

### Information from Advertisers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

### Product Showcase Information

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150

Please print clearly

Name

Title

Company

Address

City, State, Zip (required)

Country

Phone: (Area code/Number)

FAX

e mail

A. Department you most often work in (please check one):

- ☐ 1) Accounting, finance or auditing
- ☐ 2) Administration or general management
- ☐ 3) Design or creative services
- ☐ 4) Education or training
- ☐ 5) Engineering
- ☐ 6) Manufacturing, production or operations
- ☐ 7) Marketing, promotion or communications
- ☐ 8) MIS/DP, tech. services or tech. documentation
- ☐ 9) Other

B. Computer you use at work or at home (please check all that apply):

- ☐ 10) IBM or compatible
- ☐ 11) Macintosh
- ☐ 12) NeXT
- ☐ 13) Sun
- ☐ 14) Other Unix workstation

C. Publication you read regularly (please check all that apply):

- ☐ 15) Business Week
- ☐ 16) Byte
- ☐ 17) Communications Week
- ☐ 18) Computer Reseller News
- ☐ 19) Computerworld
- ☐ 20) Forbes
- ☐ 21) Fortune
- ☐ 22) Infoworld
- ☐ 23) LAN Times
- ☐ 24) MacUser
- ☐ 25) Macweek
- ☐ 26) Macworld
- ☐ 27) Open Systems Today
- ☐ 28) PC Magazine
- ☐ 29) PC World
- ☐ 30) Personal Workstation
- ☐ 31) Publish
- ☐ 32) SunWorld
- ☐ 33) Unix Review
- ☐ 34) Unix World
- ☐ 35) Wall Street Journal

- ☐ Check here for a one-year subscription to NeXTWORLD. \$29.95/year for 12 monthly issues a year.  
For Canada add \$15 (includes 7% GST tax). All other foreign orders must be pre-paid in U.S. funds only and add \$40 for airmail delivery or \$15 for surface mail delivery. DO NOT SEND CASH. Check or money order accepted. FAX: 1-615-377-0525 to charge Visa/MC.

APRIL ISSUE

EXPIRES MAY 24, 1994

### Information from Advertisers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

### Product Showcase Information

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150

Please print clearly

Name

Title

Company

Address

City, State, Zip (required)

Country

A. Department you most often work in (please check one):

- ☐ 1) Accounting, finance or auditing
- ☐ 2) Administration or general management
- ☐ 3) Design or creative services
- ☐ 4) Education or training
- ☐ 5) Engineering
- ☐ 6) Manufacturing, production or operations
- ☐ 7) Marketing, promotion or communications
- ☐ 8) MIS/DP, tech. services or tech. documentation
- ☐ 9) Other

B. Computer you use at work or at home (please check all that apply):

- ☐ 10) IBM or compatible
- ☐ 11) Macintosh
- ☐ 12) NeXT
- ☐ 13) Sun
- ☐ 14) Other Unix workstation

C. Publication you read regularly (please check all that apply):

- ☐ 15) Business Week
- ☐ 16) Byte
- ☐ 17) Communications Week
- ☐ 18) Computer Reseller News
- ☐ 19) Computerworld
- ☐ 20) Forbes
- ☐ 21) Fortune
- ☐ 22) Infoworld
- ☐ 23) LAN Times
- ☐ 24) MacUser
- ☐ 25) Macweek
- ☐ 26) Macworld
- ☐ 27) Open Systems Today
- ☐ 28) PC Magazine
- ☐ 29) PC World
- ☐ 30) Personal Workstation
- ☐ 31) Publish
- ☐ 32) SunWorld
- ☐ 33) Unix Review
- ☐ 34) Unix World
- ☐ 35) Wall Street Journal

- ☐ Check here for a one-year subscription to NeXTWORLD. \$29.95/year for 12 monthly issues a year.  
For Canada add \$15 (includes 7% GST tax). All other foreign orders must be pre-paid in U.S. funds only and add \$40 for airmail delivery or \$15 for surface mail delivery. DO NOT SEND CASH. Check or money order accepted. FAX: 1-615-377-0525 to charge Visa/MC.



# FREE PRODUCT INFORMATION



NO POSTAGE  
NECESSARY  
IF MAILED IN  
UNITED STATES

## BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 859 PITTSFIELD MA

POSTAGE WILL BE PAID BY ADDRESSEE

# NEXTWORLD

READER SERVICE DEPARTMENT

P.O. BOX 5068

PITTSFIELD MA 01203-9657



NO POSTAGE  
NECESSARY  
IF MAILED IN  
UNITED STATES

## BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 859 PITTSFIELD MA

POSTAGE WILL BE PAID BY ADDRESSEE

# NEXTWORLD

READER SERVICE DEPARTMENT

P.O. BOX 5068

PITTSFIELD MA 01203-9657



# NEXTWORLD



- Business and scientific charting
- Advanced image editing and processing
- Presentation and outlining
- Easy-to-use drawing & illustration
- Technical and business drawing
- Business graphics
- Drag-and-drop non-native image files
- Photorealistic 3D renderer
- Image file format converter
- Scitex IRIS solution
- Scanning application for various scanners
- Graphical PS/EPS editor
- Typeface illustration
- Advanced graphic illustration
- Image editing and processing
- Architectural design
- Word processing standard
- 3D modeler and renderer
- 3D animator
- 3D modeler and renderer
- 3D modeler and renderer

## Software

Voice mail, email, fax, modem  
Email & UUCP connection setup  
Telecommunications

## Chinese environment

Space mission game  
Timed puzzle game

- Contact management
- Imaging systems
- Network in/out board and phone messaging
- General productivity
- Dow Jones news retriever
- Information processing
- Office document manager
- Voice and speech recognition
- DOS & Windows emulation
- Address book
- Integrated project management
- Touch screen for NEXTSTEP
- Keyboard typing trainer
- Business management and information systems
- Multiple calendars management
- Client management and scheduler
- Address management and phone dialer

## SON00

Intel 486/Pentium-based workstations  
Image processing accelerator  
Intel 486 and Pentium-based workstations  
Telecommunication system box  
Live video and real-time video digitizer board  
Digital signal processing board  
High-end graphics card for Intel-based PC

- Personal flat-file database
- Multiuser flat-file database

- SNMP agent
- X-Window emulation
- UNIX network system administration
- SNMP monitor
- Network manager

Matrix-based spreadsheet  
Traditional spreadsheet  
Personal traditional spreadsheet

Simulation for pressurized pipe networks  
Dynamic building energy analysis  
Hydrology, hydraulic/water simulation  
Advanced mathematics

- Canon CLC10 driver
- Canon CLC300/500 driver
- Canon CJ10 driver
- Color printer drivers
- Monochrome printer drivers
- Dot matrix and laser printer drivers
- Dot matrix and laser printer drivers
- Dot matrix and laser printer drivers
- Desktop environment manager
- Mathematical equation editor
- Frequently used phrases insertion
- Serial-port laser disc player controller
- Forms creation
- Macro creation
- MAB-file examination and removal
- System clock synchronizer
- Large email splitter
- File compression
- Virtual screen manager
- Document history keeper
- RTF source code development tools
- System clock synchronization

- Industrial barcode creation objects
- Industrial barcode creation objects
- Industrial barcode creation objects
- Industrial barcode creation objects
- Industrial barcode creation objects
- Industrial barcode creation objects
- Industrial barcode creation objects
- Industrial barcode creation objects
- Industrial barcode creation objects
- Industrial barcode creation objects
- Industrial barcode creation objects
- Industrial barcode creation objects
- Bar-code reader
- Multimedia authoring tool
- Application crash reporter
- Set of tools, classes and protocol
- Power controller
- AppKit and DBKit extension object palette
- Object library/palette for communications
- Serial peripherals server objects
- System modeling and simulation objects

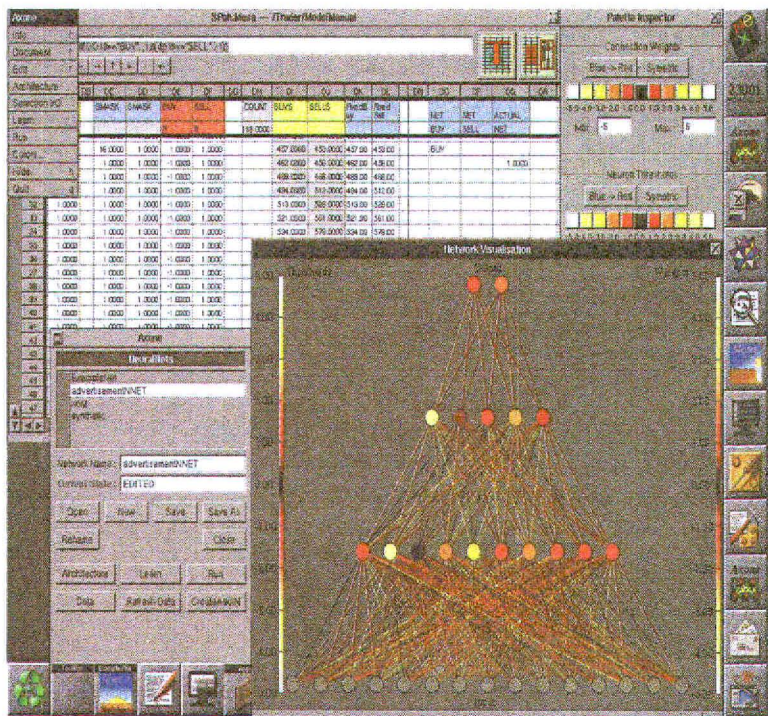
**info@alembic.com**

34 Alexandra House  
333 Kings Road  
London SW3 5ET, United Kingdom  
+44.71.351.9980  
+44.71.351.3117 fax

SIMSON00002166



AXONE: Neural Networks for MESA™



AXONE.app is a brand new NeXTSTEP application that lets you create, test, and run neural networks in a flash. Axone accesses your data model directly on your running MESA spreadsheet. Once satisfied with network performance, output your network as a Mesa AddIn, or as a C-Function. All calculations necessary during network training are performed by Axone\_server, a platform independent program available for all NeXTSTEP platforms, as well as SUN, HP, and others. Special introductory Price: 495 US\$.

Xenon Technologies Corp./16 Rue Christophe Colomb, 75008 Paris, France  
Tel: (33) 59 24 15 27, Fax: (33) 59 03 66 30, Email: Axone@ia5.u-strasbg.fr

Circle 101 on reader service card

ECLIPSE: TO LEAVE OTHERS BEHIND

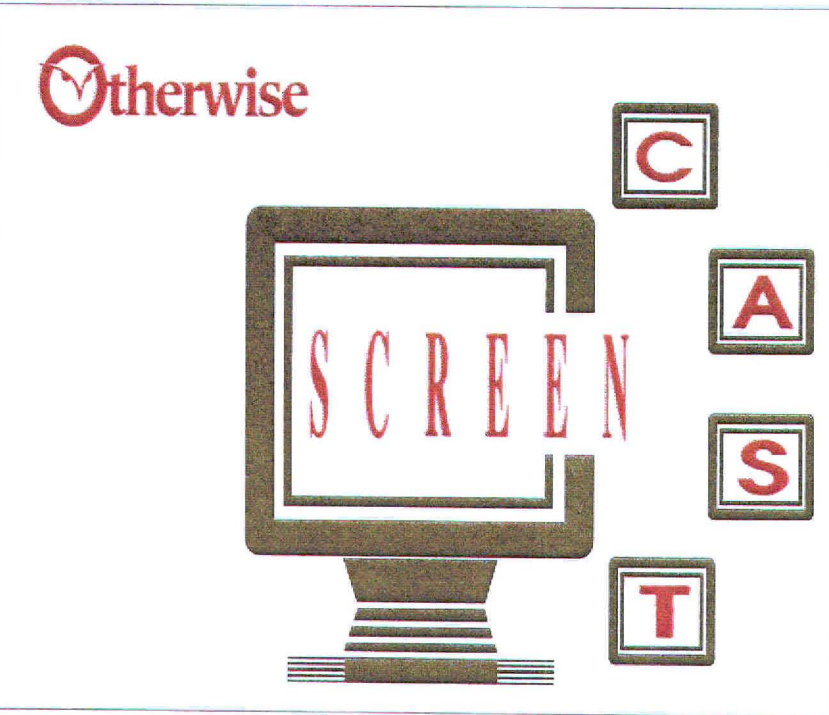


Eclipse 850E	Eclipse 735E	Eclipse 535E
Pentium 60MHz	Pentium 60MHz	Intel 486-66MHz
32mb exp. 64	32mb exp. 64	16mb exp. 32mb
2GB SCSI-2	1.2GB SCSI-2	540MB HARD DRIVE
32-BIT CONTROLLER	32-BIT CONTROLLER	32-BIT CONTROLLER
INTERNAL CD-ROM	INTERNAL CD-ROM	INTERNAL CD-ROM
#9GXE 1280X1024	#9GXE 1280X1024	#9GXE 1280X1024
17" .28DP MONITOR	17" .28DP MONITOR	17" .28DP MONITOR

Data Net/1188 Elko Dr/Sunnyvale, CA 94089  
voice 800.695.1599/fax 408.747.0955

Circle 102 on reader service card

Remote control for NEXTSTEP



ScreenCast™ allows remote control of other NEXTSTEP computers on you local or wide-area network. You see a copy of the remote computer's display and are able to manipulate it using your mouse and keyboard—just as if you were there in person. ScreenCast is invaluable for performing remote system administration without ever leaving your desk. It is also perfect for providing remote user support—talk on the phone while *showing* the user how to correct the problem. \$160 per user.  
Call or email for a free evaluation copy.

Otherwise/1501 Lowe Ave/Bellingham, WA 98226  
(206) 647-9436, Fax: (206) 738-6017/screencast@otherwise.com

Circle 103 on reader service card

Screen recording for NEXSTEP



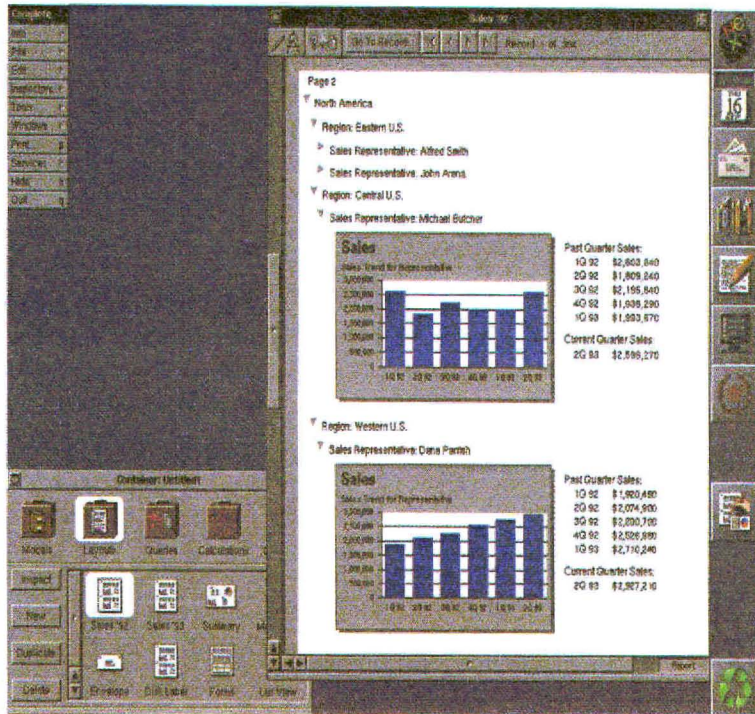
WatchMe™ creates "tapes" by recording the screen activities and sounds of a work session to disk. You record a session, explaining what you are doing while you are doing it. When the tape is played back, viewers hear your voice while seeing what you did. WatchMe is great for creating instructional materials or for documenting your custom applications. WatchMe tapes can be used by themselves, or incorporated into multimedia documents.

Otherwise/1501 Lowe Ave/Bellingham, WA 98226  
(206) 647-9436, Fax: (206) 738-6017/watchme@otherwise.com

Circle 104 on reader service card



## Complete Access

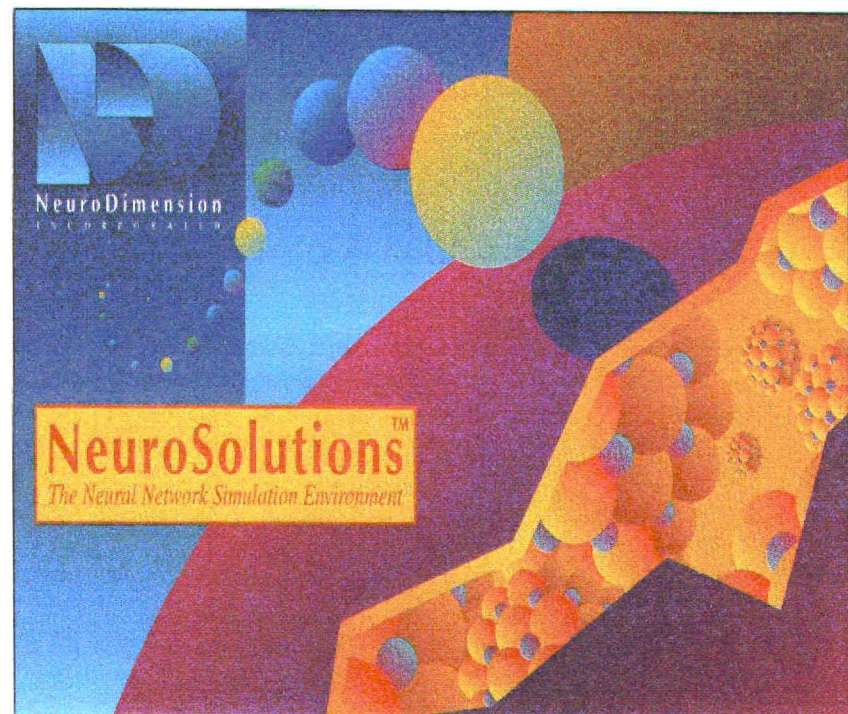


Complete Access is the first object-oriented report writing application. Features include an intuitive graphical query builder which lets anyone create ad hoc queries without learning SQL, charting, and optional out-lining. Approximately 100 functions permit you to perform almost any type of calculation on your data. Use Complete Access to create not only your reports, but mail labels, envelopes, forms, list views, and more. Complete Access can be used with Rosebase, Sybase, Oracle, QuickBase, Interbase, or any other database for which an adaptor is available.

Ocean Software, Inc./4241 Baymeadows Rd #12, Jacksonville, FL 32217  
904-363-1646/info@oceansoft.com

Circle 105 on reader service card

## Neural Network Simulation Environment



NeuroSolutions™ provides a highly advanced, object-oriented simulation environment for neural network design applications. The innovations featured in this package give you unparalleled power to deploy neural networks to provide real world solutions for manufacturing quality control, financial forecasting, targeted marketing, academic and laboratory research. Our package implements both static and recurrent neural networks with incredible power and speed and provides extensive probing capabilities. With NeuroSolutions, a neural network is no longer a "black box".

NeuroDimension, Inc./720 SW 2nd Ave., Suite #458/Gainesville, FL 32601  
(800) 634-3327/(904) 377-5144/FAX (904) 338-6779

Circle 106 on reader service card

## The Last Word in NEXTSTEP Systems

Pars International Computer  
**NOW SHIPPING**

BARRACUDA Series  
Benchmarked the fastest  
'486DX-66Mhz, EISA/VESA  
up to 1MB Cache and 256 MB memory  
Pentium™ Technology available  
starting at \$1995.

Made In USA

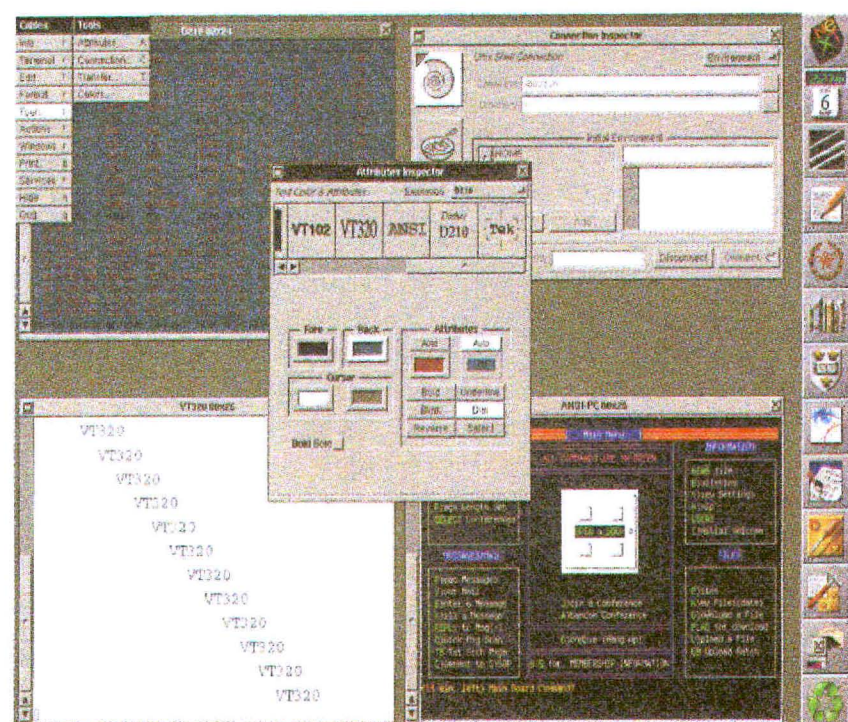
All of our systems are preloaded, configured, and tested with NEXTSTEP according to your requirements. Our customer service has made us No. 1, ask Clorox, Bank of America, Lawrence Berkeley Lab, UC Berkeley, Unisys Corp., EDS, PG&E, and many more.

Order Desk Call Toll Free: 1-800-947-4742

Pars International Computer/ 22441 Foothill Blvd./Hayward, CA 94541/(800) 947-4742  
(510) 733-0103 Fax (510) 733-0206

Circle 107 on reader service card

## ACCURATE TERMINAL EMULATION FOR NEXTSTEP



Cables is the definitive terminal emulation and communications application for NEXTSTEP. Features: DEC VT320, VT220, VT102, ANSI-PC, DG D211, Tektronix 4010/4014 emulations; function keys and keyboard mapping; connect directly to serial ports, shells, or remote hosts; built in file transfer protocols; full color support; drag and drop configurations and more. With accuracy, robustness, and ease of use, Cables is the clear choice for your interoperability and legacy application needs. Price: \$189-\$399. Available for Intel and NeXT hardware.

Yrrid Incorporated/507 Monroe St./Chapel Hill, NC 27516/(919) 968-7858  
Fax (919) 968-7856/E-mail: info@yrrid.com

Circle 108 on reader service card



## Product Showcase

### 100 MIPS PENTIUM™ PROCESSOR w/ PCI LOCAL BUS

60MHz Pentium™ Processor	60MHz Pentium™ Processor
Intel® PCI Motherboard	Intel® PCI Motherboard
32MB RAM	16MB RAM
Teac 1.44MB Floppy Drive	Teac 1.44MB Floppy Drive
1 GB Fast SCSI-2 Hard Drive	345MB IDE Hard Drive
Toshiba Double Spin CD-ROM	15" Monitor
PCI Video Card w/ 2MB	PCI Video Card w/ 2MB VRAM
Fast SCSI-2 Controller	IBM/Lexmark Keyboard
17" Viewsonic Monitor	Microsoft Ergonomic Mouse
Intel® Ethernet Card	PRICE \$3,295
Media Vision Sound Card & Speakers	
IBM/Lexmark Keyboard	NeXTSTEP single user add \$795
Microsoft Ergonomic Mouse	NeXTSTEP Developer add \$1,995
PRICE \$5,995	2GB RAID 5 Disk Array add \$3,995

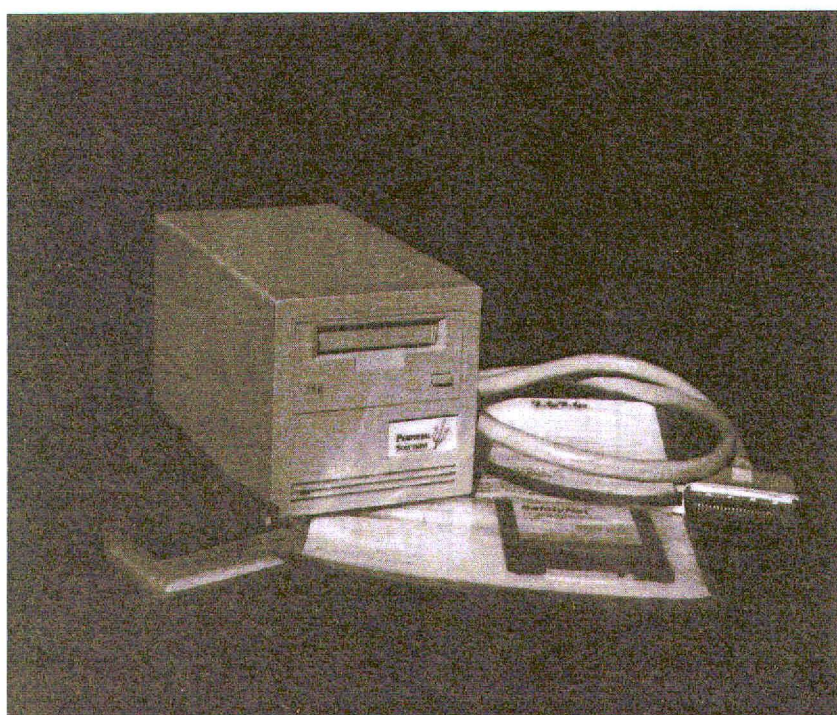
Prices reflect Cash/Check sales

Our 64bit Pentium™ Processor is more than twice as fast as a 32bit 486DX2-66 and over four times faster than a NeXTstation TurboColor. Our Intel® motherboard incorporates PCI Local Bus, the NEW industry standard with data transfer rates of 132MB/s. We only use Intel® manufactured motherboards that are upgradable to faster Pentium™ Processors as they become available. Don't be fooled by 32bit 486 systems that claim to be Pentium™ upgradable. **THEY'RE NOT!** We specialize in custom configurations with over a year's experience with NeXTSTEP on the PC and we typically deliver within 1-2 weeks. TAG is a Small, Minority-Owned Business. Systems available on GSA Schedule. Call toll free 24Hours to talk to a Support/Sales MSEE.

Technology Advancement Group, Inc./4425 Brookfield Corporate Drive, Suite 800  
Chantilly, VA 22021-1642 Ph. (800) TAG-POWER (703) 631-111 Fax (703) 631-2761  
Pentium Processor and Intel Inside are registered trademarks of Intel Corporation

Circle 109 on reader service card

### PLUG AND PLAY PERIPHERALS FOR YOUR NeXT



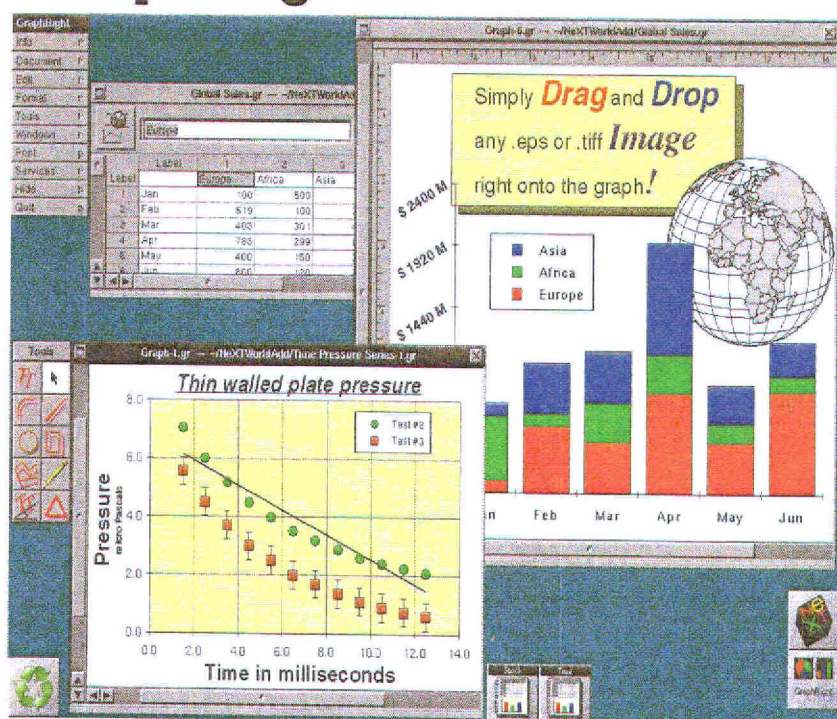
Peripheral Solutions specializes in quality high performance disk, tape and CD-ROM subsystems for your NeXT workstation. Each device has been qualified on the NeXT to ensure true plug and play reliability on black and white hardware.

- First rate sales and technical support.
- University and Government PO's accepted.
- Micropolis 1 GB External Disk Subsystem, \$998.
- Exabyte 4200 DAT Subsystem, \$998.
- Come visit us at our booth at NeXTWORLD EXPO this June.

Peripheral Solutions/108 Dubois Street/Santa Cruz, CA 95060  
(408) 457-3160 Fax: (408) 425-5792/Email: psi\_eng@netcom.com

Circle 110 on reader service card

## GraphRight



GraphRight is the most advanced, easy to use application for creating graphs and charts available for NeXTSTEP today. GraphRight's Object Oriented API can retrieve data from a variety of sources such as databases and stock feeds.

Features include: •Full Distributed Object API •Dynamic Object Linking •Error Bars and Linear Regression •Intuitive Interface •Backdrop Imaging •Easy to Use Table Based Data Editor •Full Rich Text Editing •Unlimited Undo •Drag and Drop Everything •Discontinuous Selection of Data.

Watershed Technologies Inc./13 Tremont St. Suite 3F/Marlboro, MA 01752/(508)-460-9612  
Fax (508)-481-3955/graphright@watershed.com

Circle 111 on reader service card

## 23 Unique or Superior Features

Ask about FREE  
Mission Critical Solitaire  
copy of

# Crash Catcher

CrashCatcher™ is a non-intrusive runtime utility for Objective-C debugging. It sends comprehensive crash and non-fatal NXException reports to the user's console or to an e-mail address for software in gdb, beta-test and production. Initiate reports externally and then return control to the application. Customize report triggers and contents, even to system and third party resources. Safely decode C strings and objects. Enable "soft landings". To save time in development and achieve 100% reporting of errors in the field, ask for your free Evaluation Kit.

WhiteLight Systems, Inc./350 Cambridge Avenue, Suite 200/Palo Alto, CA 94306  
Phone: (415) 321-2183/Fax: (415) 321-2083/info@whitelight.com

Circle 112 on reader service card



# Advertiser Index

RS#	COMPANY	PAGE #
27	Alembic Systems	30-31
7	Anderson Financial Systems	14
64	Athena Design	C3
101	Axone	32
79	Black & White Software	10
86	BLaCKSMITH, Inc.	4
102	Data Net	32
96	GEC Computers	27
8,49,30,55	GS Corp./Collaggi	6,7,8,9
29	Lighthouse	C2
93	Miro Computer	3
57	NationsBanc	28
106	NeuroDimensions	33
99	Next Computer	22-23
38	Objective Technologies	C4
105	Ocean Software	33
103	Otherwise	32
104	Otherwise	32
59	Pages	2
107	PARS International	33
110	Peripherals Solutions	34
1	Printer Works, Inc.	25
70	RDR	10
73	Sarrus Software	12
109	Technology Advancement Group	34
111	Watershed Technologies	34
112	Whitelight Systems	34
31	Workstation 2000	29
108	YRRID	33

## IDG: WORLDWIDE

NeXTWORLD is a publication of International Data Group, the world's largest publisher of computer-related information and the leading global provider of information services on information technology. International Data Group publishes over 194 computer publications in 62 countries. Forty million people read one or more International Data Group publications each month. International Data Group's publications include: ARGENTINA'S Computerworld Argentina, Infoworld Argentina; ASIA'S Computerworld Hong Kong, PC World Hong Kong, Computerworld Southeast Asia, PC World Singapore, Computerworld Malaysia, PC World Malaysia; AUSTRALIA'S Computerworld Australia, Australian PC World, Australian Macworld, Network World, Mobile Business Australia, Reseller, IDG Sources; AUSTRIA'S Computerwelt Oesterreich, PC Test; BRAZIL'S Computerworld, Gamepro, Game Power, Mundo IBM, Mundo Unix, PC World, Super Game; BELGIUM'S Data News (CW) BULGARIA'S Computerworld Bulgaria, Ediworld, PC & Mac World Bulgaria, Network World Bulgaria; CANADA'S CIO Canada, Computerworld Canada, Graduate Computerworld, InfoCanada, Network World Canada; CHILE'S Computerworld Chile, Informatica; COLOMBIA'S Computerworld Colombia; CZECH REPUBLIC'S Computerworld, Elektronika, PC World; DENMARK'S CAD/CAM WORLD, Communications World, Computerworld Danmark, LOTUS World, Macintosh Produktkatalog, Macworld Danmark, PC World Danmark, PC World Produktguide, Windows World; ECUADOR'S PC World Ecuador; EGYPT'S Computerworld (CW) Middle East, PC World Middle East; FINLAND'S MikroPC, Tietoviikko, Tietoverkko; FRANCE'S Distributique, GOLD-EN MAC, InfoPC, Languages & Systems, Le Guide du Monde Informatique, Le Monde Informatique, Telecoms & Reseaux; GERMANY'S Computerwoche, Computerwoche Focus, Computerwoche Extra, Computerwoche Karriere, Information Management, Macwelt, Netzwelt, PC Welt, PC Woche, Publish, Unit; GREECE'S Infoworld, PC Games; HUNGARY'S Computerworld SZT, PC World; INDIA'S Computers & Communications; IRELAND'S Computerscope; ISRAEL'S Computerworld Israel, PC World Israel; ITALY'S Computerworld Italia, Lotus Magazine, Macworld Italia, Networking Italia, PC Shopping Italy, PC World Italia; JAPAN'S Computerworld Today, Information Systems World, Macworld Japan, Nikkei Personal Computing, SunWorld Japan, Windows World; KENYA'S East African Computer News; KOREA'S Computerworld Korea, Macworld Korea, PC World Korea; MEXICO'S Compu Edicion, Compu Manufactura, Computacion/Punto de Venta, Computerworld Mexico, MacWorld, Mundo Unix,

PC World, Windows; THE NETHERLANDS' Computer! Totaal, Computable (CW), LAN Magazine, MacWorld, Totaal "Windows"; NEW ZEALAND'S Computer Listings, Computerworld New Zealand, New Zealand PC World; NIGERIA'S PC World Africa; NORWAY'S Computerworld Norge, C/World, Lotusworld Norge, Macworld Norge, Networld, PC World Ekspress, PC World Norge, PC World's Produktguide, Publish & Multimedia World, Student Data, Unix World, Windowsworld; IDG Direct Response; PANAMA'S PC World Panama; PERU'S Computerworld Peru, PC World; PEOPLE'S REPUBLIC OF CHINA'S China Computerworld, China Infoworld, PC World China, Electronics International, Electronic Product World, China Network World; IDG HIGH TECH BEIJING'S New Product World; IDG SHENZHEN'S Computer News Digest; PHILIPPINES' Computerworld Philippines, PC Digest (PCW); POLAND'S Computerworld Poland, PC World/Komputer; PORTUGAL'S Cerebro/PC World, Correio Informatico/Computerworld, MacIn; ROMANIA'S Computerworld, PC World; RUSSIA'S Computerworld-Moscow, Mir - PC, Sety; SLOVENIA'S Monitor Magazine; SOUTH AFRICA'S Computer Mail (CIO), Computing S.A., Network World S.A.; SPAIN'S Amiga World, Computerworld Espana, Comunicaciones World, Macworld Espana, NeXTWORLD, Super Juegos Magazine (GamePro), PC World Espana, Publish, Sunworld; SWEDEN'S Attack, ComputerSweden, Corporate Computing, Lokala Nätverk/LAN, Lotus World, MAC&PC, Macworld, Mikrodatorn, PC World, Publishing & Design (CAP), Datalingenjoren, Maxi Data, Windows World; SWITZERLAND'S Computerworld Schweiz, Macworld Schweiz, PC Katalog, PC & Workstation; TAIWAN'S Computerworld Taiwan, Global Computer Express, PC World Taiwan; THAILAND'S Thai Computerworld; TURKEY'S Computerworld Monitor, Macworld Turkiye, PC World Turkiye; UKRAINE'S Computerworld; UNITED KINGDOM'S Computing /Computerworld, Connexion/Network World, Lotus Magazine, Macworld, Open Computing/Sunworld; UNITED STATES' AmigaWorld, Cable in the Classroom, CD Review, CIO, Computerworld, Desktop Video World, DOS Resource Guide, Electronic Entertainment Magazine, Federal Computer Week, Federal Integrator, GamePro, IDG Books, Infoworld, Infoworld Direct, Laser Event, Macworld, Multimedia World, Network World, NeXTWORLD, PC Letter, PC World, PlayRight, Power PC World, Publish, SunWorld, SWATPro, Video Event; VENEZUELA'S Computerworld Venezuela, MicroComputerworld Venezuela; VIETNAM'S PC World Vietnam

## INTRODUCING

# NEXTSTEP Careers

NEXTSTEP Careers is your best source to find expert programmers for your mission critical custom applications. With 30,000 NeXTWORLD Subscribers, we are the premiere publication for NEXTSTEP owners and analysts.

## SOFTWARE ENGINEERS/DEVELOPERS

BOULDER \* WESTPORT CT \* HOUSTON \* NEW YORK \* D.C.

SHL SYSTEMHOUSE is a leader in Object Oriented Systems Integration and Software Development. We are seeking Object Technology Software professionals to join our Capital Markets and Trading Group, Object Technology Center (OTC), and Object University. At SHL Systemhouse Object Technology is a vision, a philosophy and a well defined software development environment.

Object career opportunities exist for Project Managers, Software Engineers and Business Development Professionals with two or more years experience in Object Technology in a NeXTSTEP development environment. For information send your resume to Michelle Hayden, Dept. NW494, SHL Systemhouse 950 South Winter Park Dr., Suite 200, Casselberry Florida 32707. (800) 769-8704 or Fax 407/767-5309 (VFM).

**Resumes invited:** Unix and NeXTSTEP Consultants/Developers with strong backgrounds in OOP/OOD. Experience with RDBMS/OODBMS a plus. Resumes to **Information Technology Solutions** 500 W. Madison ST. Suite 2210 Chicago, IL 60661 or Email to [resumes@its.com](mailto:resumes@its.com). No telephone calls please.

## Buy/Sell

Buy and sell surplus and used NeXT hardware and peripherals. Dealers and individuals will get the most options and the best prices on the NeXTWORLD BLACK MARKET. Coming in May!

## Disks

NeXT [cube] optical disks, unused, in original wrapping. Limited quantity. \$25 each + plus ship, or \$250/box of 10. (412) 683-2380.

**NeXTWORLD Classifieds** reach the largest NeXT Market possible with a single ad. Place your ad in **NEXTSTEP Careers**, **Buy/Sell**, or under any heading for the same rate.

**Rate:** \$125 per column inch. There are seven lines per inch. Thirty-six characters equal one line (include punctuation, letters and spaces as characters).

To place your ad today. . .  
Fill out this form and mail it or fax it to:

NeXTWORLD Classifieds  
501 2nd Street  
3rd Floor  
San Francisco, CA 94107  
FAX # 415/978-3196

Issue Date: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Company: \_\_\_\_\_  
Address: \_\_\_\_\_  
  
Phone: \_\_\_\_\_

For more information call Melissa Bigelow at 415/974-7383.



**A**lthough I wear several other hats besides my NeXTWORLD-columnist fedora, I've never before been tempted to wear any of them in this space. But this month I'm here as vice-chairman of the Electronic Frontier Foundation (EFF), an organization that Mitch Kapor and I cofounded three years ago.

EFF is about virtual liberty: freedoms of expression, privacy, assembly, community, and opportunity in the human environments that exist inside networked digital media. If you're a NEXTSTEP user, you probably know a lot about these "places." They are the native home of NEXTSTEP, the OS designed for connectivity.

I'm wearing this hat because I think you should know that the virtual terrain where you work is under attack by the U.S. government. It is conducting a campaign that may gravely affect the way your company does business, especially if you are in financial services or any other line that involves electronically transmitting monetary values or sensitive data.

At the urging of the FBI and NSA, the government has created a new Federal Information Processing Standard based on an encryption chip of NSA design called Clipper. These agencies hope that a Clipper will eventually be installed in every telephone and computer system in the United States and that Clipper's secret encryption algorithm will be the standard that replaces DES for all secure transmissions.

Unfortunately, it won't be very secure itself. The government will hold the decoding key to each chip. The keys themselves will be split into two pieces, one of which will be held in escrow by the National Institute of Standards and Technology, the other by the Treasury Department. Under some vaguely defined (and surely mutable) "lawful authority," law-enforcement officials may join these pieces and begin monitoring your communications.

If these communications are international, the NSA may also gain access

to them, and its constraints on extracting the key pairs are not public information. If you start using Clipper devices, your overseas customers may become fairly uneasy about the security of their transactions with you. And they should be.

As it stands, Clipper is a voluntary standard, though it may become necessary for communicating with such government bodies as the IRS. But the government hopes to suppress competing algorithms by maintaining its Cold War export embargo on robust encryption software or devices.

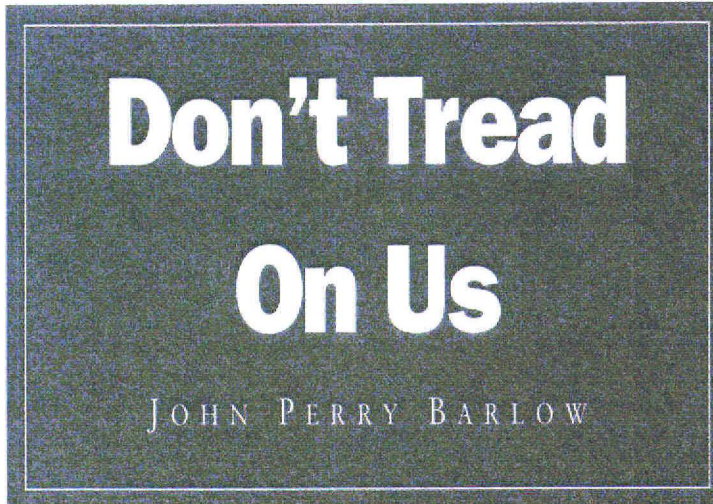
The Electronic Frontier Foundation hopes you will fight the general deployment of the Clipper chip, and we believe that the best way to do so is through expanding the sale and use of other digital locks to which the government does not hold the keys.

Because you work in an object-oriented environment, NEXTSTEP developers may have an important role in this fight. Ask your colleagues overseas to develop encryption objects that employ a secure algorithm like RSA. You can import these objects and incorporate them into applications created here.

We also strongly urge you to join our campaign to pass a bill in Congress that would force the government to lift the export embargo. Such a bill, H.R. 3627, has already been introduced by Rep. Maria Cantwell of Washington. E-mail in support of this measure can be sent to [cantwell@eff.org](mailto:cantwell@eff.org). We will print out these messages and pass them on to Congress.

Whatever your feelings about the sort of woolly-headed civil-liberties concerns we at EFF have regarding Clipper, preventing its deployment may become critical to the future of your business. After all, when cryptography is outlawed, bayl bhgynjf jvyy unir cevinpl. ♦

JOHN PERRY BARLOW stands guard here each month.



## Cosmic Taskmaster

NEXT GAMES

by SCOTT KIM

Scheduling a complex project is a challenge that can take on cosmic proportions. To fill this need, Lighthouse Design created TaskMaster, software that helps you manage the time, people, and costs in a project.

At right is a simplified TaskMaster window showing 12 tasks numbered 1 through 12. Each task has a length in days and a list of predecessor tasks (possibly none) that must be finished before it can begin. Also shown is a list of four people. Each person has a cost per use (the amount charged each time the person starts a new task) and a cost per day (the amount charged for each day of work).

### CONTEST

Your challenge is to assign the 12 tasks to the four people so the entire project is completed within 20 days and the total cost is not more than \$8800. Each task must be assigned to one person working consecutive days. One person cannot do two tasks at the same time. Record your answers in the blanks by writing the task numbers for each person. Write X for an empty day. For instance, Eartha might be 1, 12, 6, X. Extra credit: Each task corresponds to a sign of the zodiac; name the signs.

Up to ten lucky winners will receive a NeXTWORLD T-shirt. Address entries to Puzzle Editor, NeXTWORLD, 501 Second St., San Francisco, CA 94107. Or fax us at 415/978-3196. Entries must be received by April 15, 1994.

The answers to "In a Class by Itself" in the February issue are: Polygon: Quadrilateral, Equilateral Polygon, Convex Polygon; Convex Polygon: Equiangular Polygon, Trapezoid, Kite; Equiangular Polygon: Regular

Cosmic Tasks.taskmaster				
Task	Work Time	Predecessors	Resource	\$Use / \$/day
▼ 1 Feed the fish	1 days		Eartha	50 100
▼ 2 Water the plants	2 days	8,12	Aaron	50 125
▼ 3 Recycle tin cans	3 days		Fanya	25 100
▼ 4 Feed the cat	4 days		Walter	75 100
▼ 5 Buy white sheets	5 days	10		
▼ 6 Buy poison antidote	6 days	3		
▼ 7 Visit china shop	7 days	6		
▼ 8 Complain about taxes	8 days			
▼ 9 Photocopy articles	9 days			
▼ 10 Read Robin Hood	10 days			
▼ 11 Knit wool sweater	11 days	4		
▼ 12 Balance checkbook	12 days	1		

Eartha: \_\_\_\_\_ Fanya: \_\_\_\_\_  
 Aaron: \_\_\_\_\_ Walter: \_\_\_\_\_

Polygon, Rectangle; Equilateral Polygon: Regular Polygon, Rhombus; Kite: Rhombus; Regular Polygon: Square; Trapezoid: Parallelogram; Rhombus: Square; Quadrilateral: Trapezoid, Kite; Parallelogram: Rhombus, Rectangle; Rectangle: Square; Square: none.



# YOUR CORPORATE SPREADSHEET SOLUTION



## Scenario:

Wonder Widget Wholesalers, Inc. has its corporate headquarters and national sales organization in Chicago and 4 factory/distribution centers located in Atlanta, Boston, Phoenix and Seattle.

## Problem:

WWW must balance production against inventory and demand. Managers must react quickly to quality fluctuations. Salespeople must cost products to stay competitive. Executives need a real-world view of new product introductions in an easy to understand format.

## Solution:

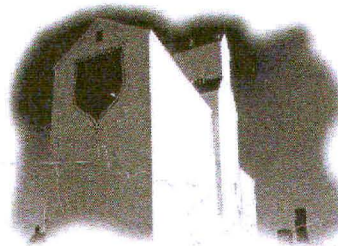
Wonder Widget Wholesalers uses Mesa to track production, to update factory output in real time, to model costs and generate sales quotes, and to query the corporate database to easily generate reports and graphs based on current and historical information.

*Seattle: A manager uses Mesa to determine material and man-hour requirements needed to fulfill orders over the next month taking into account current inventory levels.*



SEATTLE

*Chicago: The MIS department has developed a custom Executive Information application that uses Mesa to query the corporate database, build graphs, and print reports. Mesa's Object Library Interface (MOLI) made developing this application easy through Palettized spreadsheet and graph Objects.*

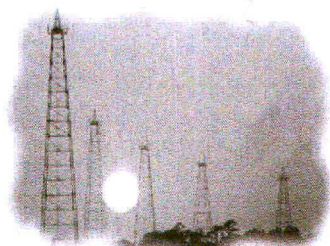


CHICAGO

*Boston: A corporate analyst uses Mesa to predict future product demand based on historical data queried from the corporate database.*



BOSTON



*Phoenix: The production department catches and fixes a quality problem within minutes based on real time production line information fed into Mesa.*

PHOENIX

ATLANTA



*Atlanta: A salesperson uses Mesa to build a quote for a customer based on current costs of production, labor costs, and other variables so that WWW makes a profit yet still has a competitive price.*

Mesa leverages the strengths of each of WWW's workers by giving them an easy, powerful tool to access corporate data, to manipulate and report that data, to exchange worksheets, and to integrate into WWW's custom application and executive information system framework. For WWW, Mesa is more than a spreadsheet, Mesa is an integral part of the corporate information structure.

SQL Queries • MOLI-Mesa Object Library Interface • Accepts Real Time Data Feeds  
File Compatibility with Excel 3.0™, 1-2-3™, SYLK™, and 20/20™

Floating License Manager and Site Licenses available.  
Educational discounts available.

**ATHENA DESIGN**  
SPREADSHEET EXCELLENCE

17 St. Mary's Court, Boston, MA 02146 USA

1.800.949.MESA

1.617.734.6372 • fax.1.617.734.1130 • info@athena.com



Mesa, the best-selling NEXTSTEP™ spreadsheet, runs on NEXTSTEP for Motorola™ and Intel™ processors.



# SERIOUS REPORTING

## Hierarchical Reports

Create multi-level hierarchical reports of arbitrary complexity. Titles and labels can repeat on each level.

## Cross Tables

Multi-directional data replication allows creation of cross tabular and other complex report sections.

## Custom Elements

Build your own palettes of report display elements. Customize the look of your report.

## Rotated Elements, too!

**MAAS**

BIOTEK

Growth S  
Trial: M

Subje  
1  
2  
3  
4  
5  
Avg

Growth S  
Trial: M

Subje  
1  
2  
3  
4  
5  
Avg

Growth S  
Trial: M

Subje  
1  
2  
3  
4  
5  
Avg

Confidential - D

**MAAS**

BIOTEK

### Cell Regeneration Trial Report Sample NS-93

Regrowth Cross Tabulation				
Trial	A	B	C	D
1	5		4	1
2	5		5	
3	4	1	3	2
4	5		4	1

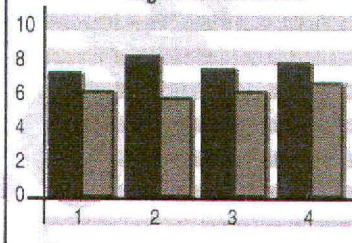
#### Regrowth Codes

A	Full Regrowth
B	Partial Regeneration
C	Cell Acceptance
D	Cell Rejection

#### Summary: NS-93 Accelerated

Depth(mm)					
Trial	Start	End	$\Delta$	Days	$ \Delta - \Delta $
1	7.16	6.16	1.00	27.4	0.24
2	8.23	5.94	2.29	35.4	1.05
3	7.52	6.28	1.24	32.2	0.00
4	6.96	6.50	0.46	19.3	0.78
			$\Delta$ 1.24	Avg. Dev. 0.50	

#### Regrowth Distribution



#### Notes

This trial was extremely successful in showing the regenerative potential of Serum NS-93. We recommend going to full human study as soon as possible.

Confidential - Do Not Distribute

Page 1 of 4

2:11am 7/11/1993

## Static Images

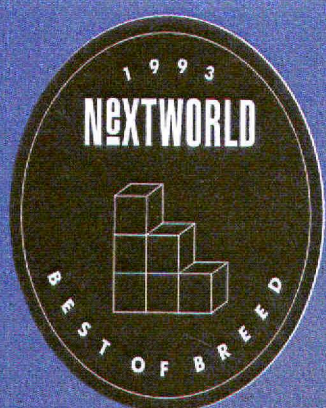
Include logos, graphics, text and other static artwork in the report layout. These will replicate as the report grows.

## Complex Analytics

Create formulas dependant on data or other calculations that are described earlier or later in the report

## Rich Text

Retrieve formatted text (RTF) from the database.



Also from OTI  
**SmartField  
Palette**

Winner of ObjectWare  
Best Of Breed Award

# Impress

## The DBKit™ Report Writer

**Impress™** is the missing piece of the DBKit. NeXT supplied the tools to create custom database applications but what you need are account statements, analytical reports, form letters and mailing labels. On paper. Without writing a program or learning PostScript®.

**Impress** lets you easily create reports from any DBKit accessible database. Use WYSIWYG layout tools to produce

Impress and SmartFieldPalette are trademarks of Objective Technologies, Inc. DBKit is a trademark of NeXT, Inc. PostScript is a registered trademark of Adobe Systems Inc.

everything from simple tables to multi-page hierarchical documents. Retrieve data with point & click query tools. Construct complex reports with an extensible scripting language.

Buy **Impress** and let Objective Technologies finish the job NeXT began. Report writing was never so easy.

**OBJECTIVE**  
*Technologies, Inc.*

800.3.OBJECT 212.227.6767 info@object.com

Circle 38 on reader service card